THE

Southern Agriculturist,

AND

REGISTER OF RURAL AFFAIRS;

ADAPTED TO THE

SOUTHERN SECTION OF THE UNITED STATES.

VOL. V.

FOR THE YEAR 1832.

THE LIBRARY
OF CONGRESS

By JOHN D. LEGARE, Editor.

CHARLESTON:
PRINTED AND PUBLISHED FOR THE EDITOR, BY A. E. MILLER,
No. 4 Broad-street.

1832.

515.15

22884
4°.

THE LIBRARY
OF CONGRESS

THE

SOUTHERN AGRICULTURIST.

JANUARY, 1832.

PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*On the culture of the Vine; by* Dr. JAMES DAVIS.

"Columbia, S. C. August 28th, 1831.

Mr. Editor,—I am sanguine in the belief that the cultivation of the vine and the making of wine is to become an important branch of business in this country: I therefore think that every hint that may tend to promote its successful cultivation ought to be communicated to the public.

There are, perhaps, more vines cultivated in the vicinity of this place, than in any other equal space in the State; and the cultivation is gradually extending, notwithstanding the difficulties and discouragements that have hitherto attended it. The great discouragement to the extension of this culture lies in the inveterate liability and tendency of the grapes to rot. This occurs during the first rainy season that annually succeeds to our accustomed spring-droughts; by which, as if by an epidemical disease, whole crops are nearly or entirely destroyed in the space of a few days. There are, in fact, no discouragements to the cultivation of the vine itself; on the contrary, it is not probable that it grows and flourishes more vigorously in any region in Europe than it does here; nor is it probable that it bears more abundantly of grapes. If, therefore, the disaster of rotting could be obviated or prevented, there could remain no question, but that the cultivation of the vine would be rapidly and widely extended. As to the blights from

frost in the spring, which occasionally occurs, we find from experience that they give rise to no very serious discouragement; and especially when the vines are planted on elevated grounds. For, although the early shoots may be cut off, yet we find such is the vigour of the vine, that it quickly sends forth a new growth which not unfrequently bears a good crop. The rotting of the grapes, in fact, seems to be almost the only difficulty in our way; and this, I cannot but flatter myself, can and will be surmounted. It may, perhaps, be surmounted by the introduction of some species of grapes that will not be liable to this disaster; or it may, and most probably can be overcome by some new methods of culture and training. We learn from the whole history of the vine that it is singularly delicate, and liable to extraordinary differences from slight and often imperceptible causes; the slightest differences of climate or soil often entirely changing the qualities of the fruit. Since then, we know that it is so delicate in its fructification, as to the quality of the grape, may we not reasonably cherish the hope that the introduction of some, even slight, circumstances in the management of the culture may enable us to get rid of the disaster of their rotting. If this could be effected there can be but one opinion as to the lucrative nature of the business. That point has been long since settled by Mr. N. Herbemont. The wines he has been making for the last ten years, have been over and over again pronounced by competent judges to be good wines: and although they are not equal to the finest, yet they are superior, and would command a higher price in the market than thousands and tens of thousands of gallons that are annually imported. If, therefore, all the grapes borne by the vines could be brought in a sound state to the vine press, it could not fail to be a profitable business. So great is the product, that Mr. Herbemont has made upwards of twenty-five gallons of wine from one vine twenty years old.

The great desideratum then is to obviate the liability of the grapes to rot; and the hint I sat down to communicate is on that subject. I have but few vines, and of these, some are twenty years old, and some about ten. Until three years ago they had always been trained upon trellisses about five or six feet from the ground, and pruned every spring in the usual manner, leaving three buds on the new wood. They bore abundantly of grapes, but they uniformly rotted in

such a manner that we seldom got twenty clusters of grapes brought to perfection. Three years ago I elevated one of the younger vines (which had never yielded a ripe cluster) upon an arbour for a garden shade. To our astonishment it bore a full crop of very perfect grapes the first year, and has continued to do so ever since, whilst all my other vines rotted as usual. I was struck with this fact, and the next spring I elevated some others; and we were gratified with a similar result, whilst the vines not yet elevated continue to rot: and even the Gigans, one of those most liable to rot came to full perfection. Last spring I elevated all of my vines; and now, notwithstanding, the excessively wet season we have had, I have a full and abundant crop in great perfection from every vine; whilst the rot has been unusually destructive all around. I have elevated my vines on arbours about twelve feet high and twelve feet wide—taking care after pruning in the usual manner to spread the branches over the arbours at regular distances apart, and to tie them down to their respective places. I cultivate the Yucha grass as a convenient substance to tie with: but a slight tie with almost any thing will answer the purpose and especially if they be trained to the eastward, so as to screen their tender branches from the straining and ruffling of the (March) western winds. I am very careful and consider it very essential, that no shoots or sprouts be permitted to grow upon the vine stalks below the eaves of the arbours, so as to allow of a free ventilation under them. I have been successful, and particularly, as I have remarked, that those of my neighbours who have most nearly approximated my success, have also most nearly approximated my plan of training, that I am led to attach importance to *elevated training on dry and unshaded arbours.* I only, however, offer it as a hint. It will require much longer time and much more experience to settle the fact; but in our country where timber is so very abundant it will be very easy for every one who has a vine to make the experiment. I could offer some speculations on what I conceive the advantages of this mode of training to depend, independently of the ventilation afforded by it, but my intention in making the communication is simply to state a fact.

Should this mode of training be found to secure the grapes from rotting, it will doubtless be universally adopted. It is attended, it is true, with some inconveniences;

but it will commend itself on the score of much greater advantages independently of the security from rot.

So far as my experience has gone, the vine is brought to yield incomparably more grapes than by any other mode of training. I also find by this high training, that the ground so far from being lost, produces better cabbages and cucumbers under the shades of the arbours than elsewhere; and the grapes do not appear to be at all injured or impaired by them. Another advantage in this mode of training, and especially for a vineyard for wine making is, that the vines are of a convenient height and width for driving a wagon and team under them whilst the gatherers standing on the wagon may gather the grapes and deposit them at their feet with great despatch. Another advantage is, that standing so high they are beyond the reach of pilferers, who must carry their ladder to enable them to commit their depredations. And last, though not least, the above plan gives to the crop a pleasantness to the eye, that no other plan does. The clusters hanging underneath the shady leaves, and presenting themselves in full view to the eye from the earliest germination to the mature cluster, renders it a most beautiful kind of crop.

Very respectfully, dear Sir, your most obd't. serv't.

JAMES DAVIS.

P. S. I planted the Bengal Indigo Seed which you were so good as to give me; but because either the drought in the spring, or because the seed had received some damage from the long voyage, they came up badly. What did come up has flourished very well; and I find it is a very different variety from either of the two kinds formerly planted in this State. I shall be very careful of the seed, and hope to be able to give you an article on it next year.

ART. II.—*On the Gama Grass; by* WM. ELLISON.

"Fairview Sept 22d, 1831.

Dear Sir,—In the last number of the Agriculturist I find a further notice of the Gama grass, from the pen of Mr. Magoffin of Alabama who says that he is induced to believe that it will be found that this extraordinary grass belongs to the western and south-western prairies; and also in his letter to Mr. Smith that he has never seen it east of the Mississippi. I agree with you that he is mistaken in supposing that it is confined to the region beyond the Mississippi, and I think that further examination will prove that it is extensively disseminated over the Southern States. Certain I am that I have seen it at intervals and various places for more than thirty years back, though like most others without knowing its value or thinking about it except as a large and fine looking grass, until about eighteen months ago. I will mention the primary causes which first led me to turn my attention to it; for I had seen no account of it until I saw that which appeared in the June number of your journal. In the early part of life I was accustomed to field labours, and saw a few bunches of this grass in my fathers fields on the Wateree river, but those fields have been long since worn out, abandoned, and grown up with briars and undergrowth, and open to stock, and I suppose those bunches have disappeared. I had likewise seen it elsewhere, but the particular spots I have forgotten. For many years after attaining the years of maturity I was engaged in a profession which I followed with but little relish, and of course met with but moderate success. About six years ago I abandoned it, and have since devoted myself to agriculture. Released from a kind of intellectual penitentiary I entered with ardour into my new pursuit, and have since followed it with the zeal of an amateur. During the time however, that I was engaged in a profession I was not inattentive to the progress of agriculture. I was fond of conversing with practical planters on agricultural subjects, of reading such works as treated of it, and of most branches of natural philosophy connected with it. I had for years back observed the indifferent state of agriculture among us and I have been, and still am of opinion that without a change in our system not all the magic of political econo-

my nor the blessings of free trade can save the upper country from ultimate impoverishment. I have had no faith in nine-tenths of the exaggerations that have been uttered and published about the ruinous effects of the protecting system on the prosperity and interests of the South. Instead of regarding the tariff as a demon or a monster that is devouring our substance, and with the unspairing voracity of the Goule in Vathek would feast on our carcases when we are starved to death; I have viewed it as an ill arranged system, unwise in many respects, dispensing its benefits or inflicting its injuries where any exist, to all portions of the United States; yet chargeable in reality with but a small portion of the evils which afflict the South. I have been all along convinced that the canker of decline existed at the core even in times of the greatest apparent prosperity, it consisted in a ruinous system of agriculture, working the most fearful ravages on our best lands, and also in a habit of prodigal expenditure wasting the revenues of to-day without regarding the exigences of to-morrow.

I have no intention in these remarks to disturb that hornets' nest of political strife and contention—the tariff; but have made them merely by way of inducement to what I am about to say respecting the discovery of the grass I have mentioned above. I not only agree with you that "the time is rapidly approaching when our planters must turn more of their attention to the culture of grasses;" but I go farther, and say, that the time has already arrived. I am fond of stock and manuring, but I have found that large fields of ordinary pasturage will be eaten bare in a very short time by a small stock, and the means that nature provides to restore their fertility destroyed. What is called "range" is gone and our principal reliance is on our old fields and our exhausted pasture land. Whatever of fertile lands we have is devoted to cotton and our indifferent crops of corn, to be cultivated in true Southern style for a few years, and eventually go the way of all lands, to fill up our hollows and spoil, in many instances, our flats. If we wish to establish stationary pens or stalls for littering and feeding our cattle and making manure, where will we find food for more than a few, under present circumstances, and yet those few would be better than the numbers we keep. As it is, a small planter is compelled to keep eight or ten milch cows to furnish milk and butter for his family, and as many

more dry cows to supply their places when they go dry or their milk fails. We are not always successful in keeping them alive during the winter; but if we do, and they are turned out in the spring, mere staggering skeletons to seek their subsistence where they may, we congratulate ourselves on our skill and care. Can the agriculture of any country flourish under such a system, or its prosperity long continue? Such is the picture, with but few exceptions, of Southern rural economy, and I must confess that my own management has been as bad as any.

Impressed with these reflections, I have been endeavouring, as far as circumstances would permit, to effect a change, but this, we all know, is not the work of a day. Instead of fretting myself into a delirium of rage against the authors of the American system I am inclined to leave to the returning good sense of the nation the correction of its errors, and begin the reformation of abuses at home. In pursuance of these ideas I have laid down to myself certain agricultural axioms. 1st. That every country not doomed to irreclaimable sterility possesses the means of meliorations and improvement within itself, and 2dly, that Providence has given to every region the materials of supply and sustenance to man and beast, best suited to its climate. These truisms one would suppose are so obvious as scarcely to need the parade of a formal statement; yet we seem by our practice to consider them as not applicable to our country. We have been constantly looking abroad for foreign grasses. If we only possessed the clover and timothy of the North, (some have said) we could do well; while we have at home other grasses which, to say the least, will do equally as well. Under the influence of such impressions as I have already stated, I have been convinced that we must attend more to farming, we must resort to the most approved agricultural implements and labour-saving machinery, and we ought to diversify our agricultural pursuits. To contribute as far as practicable to this change, since I devoted myself to planting I have been examining many of our native grasses. In this pursuit I have felt and regretted the want of a knowledge of botany; but we may distinguish a good from a bad grass without the aid of science, and if I possessed not the skill of the botanist, I felt a certain portion of his curiosity and spirit of inquiry, and I am convinced that we possess many that might be

usefully cultivated. There are many kinds of the large grasses; but the most of them are coarse and unsavoury, and there are, also, as all know many of the small, and the most distinguished among them, is the *crow foot*. I have long been sensible of its great value; but it is a late grass and to produce it well, requires high manuring and annual preparation of the ground.

On the flat lands and adjacent hills of Dutchman's Creek, in this district, (Fairfield,) there are three kinds of large grasses which I have particularly noticed as requiring no annual planting or preparation of the ground. One of them is large, broad leaved, but harsh and unsavoury, and therefore not desirable. The second is a finer grass and might be cultivated to advantage, and is found in large bunches in the flats and adjacent hills, and must be grubbed up to get clear of it; but much inferior to the third, the grass in question. As soon as I saw the last, I was struck with its beauty, for I had never seen it to such advantage. I had before seen it in small parcels among other grasses and under-growth; but in this instance in quantity, entirely freed from any incumberance. Those of your acquaintances below, who regard it as a coarse grass are mistaken, and have been doubtless influenced in their opinion by seeing it late in the season, when from its size it is most likely to be noticed. When from about eighteen inches to three and a half feet high, it is one of the most beautiful samples of vegetation that I have ever seen of the grass kind, especially when seen in quantity. Its deep vivid green and tender appearance and immense mass of blades first attracted my attention; cut at that time it makes an excellent hay. I do not, however, think that it is equal to the hay of the *crow foot*, which in my opinion is one of the best kinds in the world. I esteem it, however, quite equal to the best fodder or dried corn-blades, which it very much resembles in fragrance and taste. From the description of the Gama and particular examination of this, which for want of a better name, I have called the Giant Grass, as there is no doubt of their being the same.* The seed stalk of this grass bears its seed in the same manner and is crowned with a tassel bearing blooms of a red tint, as described by Mr. Magoffin. The seed stalks are fully seven feet high in

* The seeds sent us by Mr. Ellison, are of the Guinea Grass.—*Ed. So. Agr.*

general with but few blades, almost all the blades springing from the roots. Some of the bunches in my fields are four feet or more in diameter at the surface of the ground, and I have lately measured some of the blades which cut six inches from the ground, were more than a yard and three quarters in length; they are, however, at that length, rather coarse and dry and very different from the same grass when younger. I have cut but little of it, allowing it to grow at will and run to seed for the purpose of gathering.

Botanists, I should think, would rank this grass among the androgynous plants of the class Monœcia and of the same family with the Zea or Indian corn. It has its tassel above and seed vessels below, but more intimately connected than in the latter. The seeds are surrounded when in bloom with a slight web of silks, resembling somewhat the silks of corn, and the bud or eye covers a small grain, which has the exact taste of Indian corn. The seed stalks likewise, and the stems of the blades taste like the green stalks of corn. Mr. M'Goffin states that with the section of the prairie country sweeping from Georgia to Missouri, he is well acquainted and with their vegetable productions, especially grasses, and that he has never seen this grass east of the Mississippi; yet it is not impossible that it may be found in that range of country. He might, I am certain, travel in this State, from the sea-coast to the mountains, and not see a blade of it, except by accident; and yet it exists in considerable quantities. It, however, is by no means a common grass, and it would require diligence and inquiry to find it. Many might lead him to other grasses resembling it in appearance and his visit end in disappointment. During the last year I spoke of this grass to several and put them upon the look out for it, but few have found it, and it is found in greater quantities in Dutchman's Creek than any other place I have yet heard from. All along the course of this creek, in places, it is found in considerable patches; but public curiosity is beginning to be awakened to it in this district and in Columbia, it may be found in many other places.

A soil of not great depth based on stiff clay seems to be most favourable to its growth; for in such only I have found it indigenous; but it will grow any where, and is remarka-

bly hardy. By analogy, I suppose it might be found on the sea-coast or near it; for there is much land there having precisely the same kind of clay as the Dutchman's Creek lands; but except on the river lands, I doubt if it will be found in what is called the sand hill region: for there is a tail of country bordering on the Dutchman's Creek-lands of a loose absorbent soil deep to the clay where it is not to be found. In the heavy loams and stiff lands, it will be most readily found.

I have been thus particular about this grass, as great interest seems to be excited respecting it, both in my own neighbourhood and elsewhere, and I have had several applications for seed. I have saved about two gallons, the greater part of which I intend to distribute among our agricultural friends, and should be glad to have a sufficient quantity to satisfy all demands for it. The public may be assured that it will be well worthy of their attention, and will afford the means of an immense supply of excellent forage for stock, without the trouble that attends the culture of foreign grasses. To the planter who wishes to have a permanent grass plat which will last as long as he lives, and may be transmitted to his descendants, it will be very valuable; but let him beware of introducing it in lands which he may wish at a future day to devote to any other purpose; for he will find it a troublesome job to eradicate it. Although it will dispute obstinately the possession of the soil it occupies, it will not, like nut grass or joint-grass, overrun the whole field.

I planted a few roots of it early in June in my garden, which is high ground and different from their native soil, and they are growing well, many of the blades are two feet in length; but they have been more occupied in spreading than growing in height, and have spread from six to eight inches at the surface, and have thrown out a great number of shoots. I intend to set out an acre of the roots in squares of eighteen inches. This operation will doubtless, for a time, diminish any means of supplying seed; but soon enable me to obtain them in any quantity. Should any of my agricultural friends wish a supply of seeds the next season, I would suggest to them the advantage of adopting the following mode; to fix in their own estimation what they would be willing to give for the seed per quart, &c. and forward to me

the money, and I will engage persons where they are to be found to collect them carefully, and deposit them with me. What I can collect personally will be at the service of the public, but they will be too few to satisfy any considerable immediate demand, or to contribute to its rapid extension; and interest will have more influence than public spirit in inducing most persons to collect them carefully. It is possible that it may not be as widely dispersed as I imagine; for in a journey of one thousand miles in 1820, from this State to Franklin, on the Missouri, I saw none of it, and I took every opportunity of conversing with the inhabitants on the route, respecting the natural resources and productions of the country; but my inquiries as to grasses were confined principally to the cultivated kinds, yet strict inquiry might detect it even in that region. The grass of the north-western prairies is not this variety; it is a large rank grass, but when mowed in proper season makes excellent hay, and quantities of it are made in the older settled parts of the country, probably by this time every where. That this is a strong nourishing grass is sufficiently attested by the fine size and appearance of the cattle. I have no where seen finer steers and oxen than are to be seen in that region, extending from the Kaskaskia to the Mississippi, as regards the heighth and vigour, and I do suppose that the oxen of that country, are the briskest in their movements of any in the Union. It is, indeed, a fine region, and I can scarcely even at this distance of time, refrain from indulging, in a strain of enthusiasm, when recalling to mind, the natural beauties of the north-western prairies, when first seen by the traveller, especially those called the rolling prairies giving a lively picture of the ocean, seen, perhaps in its loveliest aspect, when neither labouring under the sublime and fearful agitation of the storm, nor sleeping in the stillness and tranquillity of the calm; but with its magnificent swells and gentle intervening undulations, rolling on in endless succession, as far as the eye can reach.

I will close this communication, already drawn too much perhaps into length, with a few more particulars respecting this grass. A few days ago I was shewing the plants which I had set out in my garden, to two persons of my acquaintance, one living on the Wateree Creek, and the other about three miles below me on Dutchman's Creek, and they both declared that they had seen it. The

one living on Dutchman's Creek stated, that during the working season of this year, his provisions failed, and he had no other resource but this grass to feed his horse. He cut it and fed him daily with it, and with moderate work he kept in good condition. He also stated that his brother-in-law had a cow on the lift, the winter before the last, and very early in March he cut this grass, then about six inches high, and fed her. He raised her with it and brought her into fine order before the cattle were turned out in the spring. I am gratified to observe that the people in this section are taking greater interest in these matters and taking more care of their lands; a necessity certainly exists for it, and nothing but necessity will work a change. It is called the mother of invention: I believe it to be the mother of most human improvements. Man, in the abstract, is more the creature of circumstances than the pupil of wisdom. If we could roll back the wheels of time, and place the passing generation, with their present stock of experience, at that precise period when the tide of success and prosperity could have been taken at the flood, they might steer a different course; but as respects the rising generation, raise but the price of cotton to twenty cents and all thoughts of any thing else would probably be forgotten, the lessons of experience would be disregarded, and they would act as we have done, on the advice of Horace to the voluptuary Epicurean, under the fictitious name of Leuconoe.

"Carpe diem quam minimum credula postero:"

which might be freely rendered thus: "Feast to-day, if you starve to-morrow." Adieu.

WILLIAM ELLISON.

P. S.—I must tender my thanks to Mr. Magoffin for his valuable information respecting the Gama Grass, which has quickened my zeal on the subject, and awakened a lively interest with every one to whom I have read it. As soon as a convenient opportunity offers, I will forward you the seed and roots I promised you.

Vol 5th p. 87. 169.

ART. III.—*On the Culture of the Sweet Potatoe, in reply to Q in a Corner; by* A SUBSCRIBER.

"Richmond County, (Geo.) October 15th, 1831.

Dear Sir,—Q's inquiries are commendable, as I apprehend nothing we grow is more valuable than the different varieties of the sweet potatoe. The method of planting is to lay beds off, with a plough, three and a half feet a part, proportioned to the depth of the soil; the richer the better. Should the soil be poor and thin, take stable, cow, or hog manure and put it freely over the centre of the beds, and on this the roots should be laid. The longer ones may be broken and set at twelve or fifteen inches through the row. The hoes follow and cover them over one and a half inches deep, bringing the dirt from the extreme edges of the ridge. Before the vines spread to much extent, let them be ploughed as close as convenient at least twice, and the hoes follow and remove all the grass and weeds that may be rising. The numerous roots of crab-grass taking hold and spreading round the potatoes, is the most injurious to the rising crop. If, in April, you have half or two-thirds of the plat set with plantings, the succeeding sprouts and vines will be sufficient to finish it; and as soon as they get an inch or two long, and before the sun obtains his highest power, set them in the unplanted ridges at the same distances as the mother roots were, so deep as to leave the bud uncovered. The earlier this is done the better, for if it is put off until July, dry weather and the heat of the sun may stint them or wither them to death. The roots will soon send out a new set of shoots, and presently they will begin to run finely, and the hoes should now go over the ground again removing all noxious growth, making an additional elevation on the centre of the ridge directly over the potatoes. I have had them covered so much at this stage, as to seem as though they never could surmount the heavy burthen; but after the first rain or two, they spring forward with increased vegetation, covering the ridge, water-furrow, and all with a canopy of the thickest foliage. They should not after this be stirred with hoe or plough, if the weeds occasionally rise let them be pulled up by hands. About the last of October, beef-cattle or sheep may be turned in, for the leaves are excellent pasturage. When eaten down before

frost, let the plough tear off the remaining vines and fully open the ridges, and the hands follow and gather the roots, separating the small ones for the succeeding crop. The large ones should be well sunned for five or six days, then carried in baskets to be deposited in a pile of twenty or twenty-five bushels, and covered very thin with pine bark, with straw or shucks, defending the potatoes from the friction. There should be a large opening at top for the discharge of vapour or sweat from the accumulated heap. Much attention and care should at this stage be used, as excessive heat from fermentation will cause the dry rot in the centre and spread to the circumference. Last year, six-eights of my crop were lost in this way; therefore, every circumstance of air and coolness should be administered to prevent it by opening air holes on the sides and bottom of the pile. But as the frost increases, dirt must be thrown on, all the lower air holes stopped, and a shelter of boards placed over them to defend them from rains. They are alike destroyed by excessive cold as well as heat, and I have been more fortunate in growing than preserving them well. If they are housed it should be large and airy, constructed so as to admit free circulation of air in warm weather, and capable of warmth and tightness in cold.

The yam variety from its superior size, smooth and tender skin and large product, has a preference here. By cutting the root through and laying the flat surface in hot, dry, rich soil, it will soon shoot out vines enough from a single bushel to plant an acre. A practical planter told me in this way he had measured 500 bushels from a single acre. The planting and cultivating is not more laborious than cotton, the difficulty lies in their preservation. They over-yield the yankee potatoe and are more nourishing by half. I believe all roots and grains for draught, as well as fattening animals, derive a great advantage by being steamed or boiled. In making the heap, let a stake be put in the ground, in its centre, and remove it when the heap is finished to make more free vent to vapour off the heat.

A SUBSCRIBER OF GEORGIA.

Art. IV.—*On the Tamarix Gallica, employed as a Hedge; by* William Hall, M. D.

The progression of a young country, from the undisturbed solitudes of its forests—its depthless swamps, to a state of advancement in which the art of man is seen to triumph over the rude materials of the vegetable world, and thus to bend nature to intellect, is interesting as a subject of exultation to philanthropy. But it is the purpose of this article not to indulge in speculations, however alluring from their connexion with the welfare and moral happiness of man. To invite the earnest attention of agriculturists to the consideration of a simple fact, or the trial of a single experiment, whence the least benefit is likely to result, in rendering our pursuits in life more successful, is a matter of greater importance than the uncertain and visionary conclusions of the countless theories of the day. The unexamined resources of our own State, the absence of those energies which render England a scene of beauty in her landscape, and productiveness in her agriculture, must for sometime to come, continue to retard the better destinies of our country. With reckless speed the axe prostrates the forests, and we seldom entertain a thought of the future, when timber will have become scanty, and recourse be constrained to the culture of forest as well as field. If then, any expedient is likely to arrest the desolution of the axe, it must unquestionably be found in a greater attention than hitherto to the raising of hedges. It would be here entirely superfluous, because self-evident to say any thing in favour of the time saved to the planter, whose industry has secured to himself an excellent fence, and one beautiful to the eye of taste. The success attending the culture of the the Cherokee Rose or Nondescript, will be sufficient, I trust, to warrant further experiments of other plants calculated for live hedges. Hedges of this description, it is well known, constitute the principal fences of England; for which no shrub of the vegetable world seems better adapted than the *Tamarix Gallica.* Of this plant, Linnæus enumerates several species, viz. *Tamarix Germanica*, which is rather a shrub than a tree, a native of the swamps in Germany, Siberia, and Switzerland. *Tamarix articulata* or jointed branched Tamarisk. *Tamarix Epacroides*, &c.

The Tamarix Gallica grows in Carolina with the vigour and luxuriance of an indigenous plant. It is met with in the South of France from fourteen to sixteen feet in height. In our lattitude it becomes not only a loftier tree, but attains to greater bulk in the trunk and branches. It is remarkable for its drooping and graceful foliage. The leaves are minute, smooth and deciduous. It flowers in July and presents to the eye long cylindrical clusters. The corolla and stamens are white or rose coloured. It attracts myriads of bees—is easily propagated by cuttings, and it has been to me a matter of some surprise, that recourse has not been had to it for the purpose of a quick set hedge. The cuttings used, are to be taken from the branches of the last summer's growth. I have found them to succeed best when selected of the size of a moderately stout stick and three feet in length. The cuttings to be laid in a straight trench at the distance of two and a half feet from each other and buried obliquely half their length. The months of January and February are the most seasonable for planting them. In the course of two years, an excellent and imperviable living fence is obtained. The facility with which it is raised in the lower sections of Carolina, must render it of inestimable value to the rice planter. It delights in our atmosphere, teaming with saline exhalation. Its leaves are found early in the morning weighed down under masses of dew of a strong briny taste, and presenting a beautiful hoary appearance. The cuttings laid in a trench extended along a raised bank (such as usually encloses land reclaimed from the marsh) would soon exhibit a dense and impenetrable thicket. It here vegetates with peculiar facility, and revels in a soil most congenial to its nature. When it has reached the height of four feet, it should be carefully plashed by nicking or cutting half through the different branches on their upper sides. They are thus made with a very little pressure, to fall in any requisite position, The smaller lateral twigs may be so plashed as to close all the lower vacancies and thicken every part regularly through. The Tamarix requires regular pruning once a year. It is easily confined to any defined height by the use of the saw, the labour necessary to accomplish this object being inconsiderable. It may not be improper here to mention, that the fibres of the roots become in time so intimately and minutely blended with the soil, as to constitute no trifling ad-

dition to the strength and durableness of the bank. The tides frequently overflow it without the least injury to the vegetable health of the hedge or detatching from the roots, the soil which inundations would otherwise sweep away.

The preceding observations derive much strength from what is known of the Tamarix in other climates. European writers inform us that it is found on the exposed coasts of England, especially towards the sea; in the north of Africa along the Mediterranean, and in most situations on the shores of Greece. It is supposed to have been introduced by monks from the coast of Normandy into Cornwall, and thence its cultivation was extended to other parts of England. I have thus endeavoured to render worthy of notice, a brief sketch of the natural character and cultivation of the Tamarix Gallica, with a view to its employment as a hedge; my experience of its advantage has not exceeded the success of an experiment confined to a small extent of land, but sufficient reliance may be placed on the conclusions it teaches to invite the exertions of the agriculturist on a scale more commensurate with the utility it promises to secure him.

Yours, with respect,

WILLIAM HALL.

ART V.—*Copy of a correspondence between* JOHN R. MATHEWS, Esq. *Vice President of the Agricultural Society of St. Johns, Colleton, and* Dr. SAMUEL L. MITCHELL.

"TO DR. SAMUEL L. MITCHELL, OF NEW-YORK.

Edisto Island, S. C. June 3, 1827.

Sir,—The Agricultural Society of St. Johns, Colleton, in this State, invites your attention to the following facts.—They hope this intrusion upon your time and patience, will be justly attributed by your known liberality and superior

mind, to no other claim than the present anxiety for the promotion of general knowledge.

I have the honour to be, Sir, very respectfully,
Your obedient servant,
JOHN R. MATHEWS,
Vice President.

There are two planters on this Island whose plantations are about ten miles apart, and separated by navigable creeks, marshes, &c. whose cows annually produce calves, which are *naturally* marked in the ear as the mother previously was, *artificially*, by the knife; that part of the ear which represents the incision, is as much covered with hair as any other part. This is never the case, as far as we know, where the knife has been used. These are the only two instances of the kind within our knowledge, and we would be glad to know from our great American Naturalist the cause of this effect."

—

ANSWER.

"New-York, June 17, 1827.

To JOHN R. MATHEWS, Esq.

Sir,—I have considered the communication made in your letter from Edisto Island, of the 3d inst. stating that on two plantations, calves are annually brought forth, with ear-marks naturally formed similar to those made artificially in the ears of the dams by the knife; that the edges were covered as completely with hair as the other parts of the ear; and that the like occurrence was not known among the kine in any other places.

Upon these several points you seem to desire my opinion.

Fortunately for the animal race, it happens that deformities, defects, mutilations and redundancies in the parents are not generally communicable to the offspring. A blind mother brings forth children who have perfect organs of sight. A deaf and dumb man begets upon a woman also deaf and dumb, a child with entire ability to hear and consequently to speak. Persons who have suffered amputations do not communicate their defect of limbs to their progeny. Nor are the slitting of ears, boring of noses, slashing the lower lip, and tattooing the skin by certain tribes of Indians, perpetuated by generation in the race. These various operations must be performed upon the individuals severally and successively. It is an admirable provision of

nature that it is so. This then appears to be the rule, whereby animals are guarded from considerable changes of their forms, which, if frequently effected, would render them mis-shapen and monstrous.

Yet there are exceptions. It is generally conceded, that a predisposition to certain diseases is derived by children from their parents; particularly scrophula, consumption, madness, and gout. Complexion, features, and family resemblances are referrable to this head. I knew a man who had five fingers, besides the thumb, on each hand; and the children begotten by him on a woman who had no such superfluous parts, had five fingers too. If I recollect right, the Cretans of the Vallais produce infants with the throat swelled by goitre. The sinus pudoris and the enormous lumps of the Hottentot women, may perhaps be considered as a somewhat analogous case.

I own I am not sufficiently acquainted with the philosophy of causation to assign the why and wherefore in any of these examples, and others I might enumerate. It is instructive and interesting to know the facts. They add to the amount of our rational information, whether we can account for them logically or not.

The solution of some of these problems is probably beyond the reach of human faculties; and perhaps in relation to others that lie within our ken, we have not as yet advanced far enough to give complete interpretations.

I recollect, as I write on this subject, the story of a boy who puzzled his father with a question about causation: "Parent," said the lad, "you are a distinguished philosopher, and can explain almost every thing; I wish you would tell me *why a stone is hard?*" The old man, a good deal disconcerted by the interrogation, at length rallied and explained the matter, by gravely assuring the inquisitive son, that a stone was hard because it abounded *with the principle of durity.*

I wish I could afford you a more satisfactory account of these matters. But, as it is, I beg you, and the Society you represent, to accept the assurance of my prompt obedience and respectful sentiment.

SAMUEL L. MITCHELL."

ART. VI.—*On the Culture of Asparagus; by* SOMMERVILLE.

Sir,—I observe in Number 2, of 1830, of the *Southern Agriculturist*, that invaluable garden plant asparagus, taken notice of by J. Willis, Esq.—that gentleman not being perfectly acquainted with the manner in which asparagus ought to be planted and attended, I have taken the liberty to lay before you the most approved plan of planting and attending asparagus beds, with a certainty of the greatest success—if you think that the hints I have here laid down may be anywise serviceable, you can use them for that purpose.

New plantations of asparagus can be made any time in the month of February. In making plantations of these plants, one great practice to be observed is, to make choice of a proper soil, the best the garden affords, it must not be wet nor too dry or stubborn, but such as is moderately light and pliable, so as it will readily fall to pieces in digging and raking, and in a situation that enjoys the full sun. The ground should be regularly trenched, and a large quantity of good rotten dug be regularly and equally buried in each trench, at least twelve or fifteen inches below the surface of the dug ground. The ground being trenched and laid level, divide it into beds four feet and a half wide, with alleys two feet wide between bed and bed. Four rows of asparagus roots are to be planted in each bed, and twelve inches distance to be allowed between plant and plant in the rows, and let the outside rows of each bed be nine inches from the edge.

Let it be observed, that the plants of this plantation consist entirely of roots, no top; they must not be more than two years old from the seed, but practical gardeners prefer those plants that are only one year old, which are what I would choose to plant, as from experience I have found they generally take root much freer, and succeed every way better than two year's old plants.

If you choose to raise the plants yourself, it is done by sowing the seed any time in February, in a bed of rich earth—let the bed be made five feet wide, and sow the seed broad-cast on the surface, then tread it in and cast some of the earth out of the alleys evenly over the bed or beds, and then rake them smooth. The plants will come up in three or

four weeks, when they must be kept very clean from weeds and grass, by a careful hand-weeding at different times during the summer; if the weather be very dry when the plants first come up, it will be proper to refresh them now and then with water or liquid manure, which will forward them in their growth.

They will be fit to plant out for good next spring, but if you do not choose to lose a year or two in waiting for raising the plants, you may purchase them ready raised of most nursery men in the Northern States; they are commonly sold at fifty cents per hundred.

The following is the method of planting the roots: strain your line lengthways the beds, nine inches from the edge, and then, with a spade, cut out a small trench or drill close to the line, about six inches deep, making that side next to the line nearly upright, and when one trench is opened, plant before you open another, placing the plants ten or twelve inches apart in the row.

In planting these plants, observe they must not be placed flat in the bottom of the trench as by some people practised, but nearly upright against the back of the trench or drill, so that the crown of the plant may stand upright, and be two or three inches below the surface of the ground; they ought to be all placed an equal depth, spreading their roots somewhat regular against the back of the trench, and at the same time drawing a little earth up against them with the hand as you place them, so as to fix the plants in their due position till the row is planted, then when one row is thus planted, immediately with a rake draw the earth into the drill over the plants, and thus proceed to open another drill, or trench as before directed. Plant in the same manner and cover in the plants as before, and so on till the whole is planted. When they are all planted, let the surface of the beds be raked smooth, and at each corner of every bed let a firm stake be driven into the ground to serve as marks for the alleys.

The asparagus being planted, the next care is, when the plants come up, which will be about the third week in March, to keep them clean from the weeds and grass, which must be well attended to, during the summer season.

You will be pleased to observe that it will be three years from the time of planting before the asparagus plants produce buds large enough to cut for use; although sometimes a few of

the largest buds may be cut the second spring after planting, but I should advise to let it be the third year before you make a general cutting.

A plantation of asparagus, if the beds are properly dressed, every year will continue to produce good buds ten or twelve years. In making new plantations of asparagus, it is the custom of some gardeners, instead of putting in young plants as above directed, to sow the seed at once in the beds where the plants are to remain; and it is not a bad way, for by that plan the plants are not disturbed by a removal, and consequently cannot fail of producing a regular crop, but it must be observed, that if two pieces of ground are to be laid down the same year in asparagus, and one piece be planted with young plants, the other sowed with seed, that piece which is planted, will be ready to cut a year before that which is sowed with seed.

However, to raise a plantation of asparagus at once from the seed as above, the method is this—the beds to be four and a half feet wide, and prepared as before directed for plants, mark out four lines lengthways the beds, then along these lines, at the distance of every nine or ten inches, drop in a few seeds, covering them half an inch deep; when the plants have come up some time, they must be thinned, leaving only one of the strongest in each place, and carefully clear them from weeds and grass.

A plantation of asparagus thus raised, will produce fine buds fit to cut the fourth spring after, but will be very large and fine the fifth year. As the method of cutting asparagus may not be familar to every one, I will here explain it. You should be provided with a straight narrow tapering knife, whose blade is about eight or nine inches long, and about an inch and a half broad at the haft, narrowing to about half an inch at the point, which should be rounded off from the back, and made somewhat blunt, and the edge should be made full of small teeth like a saw. When the buds are from three to four inches high, they should be cut, observing to slip the knife down close to each bud, and cut off slantingly about three or four inches within the ground, taking great care not to wound or break off any young buds, coming up near it from the same root, for there are always several buds in different stages of growth, advancing at the same time from the same root.

Forking and dressing the asparagus beds.—In February, the asparagus beds ought to be forked, that is, get their spring dressings, which is done by forking or slightly digging them with a three pronged fork. For the purpose of digging or forking these beds, you should be provided with a proper fork, it should have three tines about eight or nine inches long, the tines should be perfectly flat, and about an inch broad, pretty thin, and the ends of them should be rounded and blunt. In forking the beds, be careful to loosen every part to a moderate depth, but taking great care not to go so deep as to wound the crowns of the roots. The above work of forking asparagus beds is most necessary to be done every spring, to improve and loosen the ground, and give free liberty for the buds to shoot up, also to give free access to the sun, air, and showers of rain. The beds being forked, they must afterwards be raked even, observing, that if you do not rake them immediately after they are forked, to defer it no longer than the end of the month, for by that time the buds will begin to advance towards the surface, providing the spring sets in favourable to vegetation. If they have been neglected, by omitting to keep the soil in the beds in good heart, well-rotted manure is to be evenly laid on the surface, and forked in when they get the spring dressing. In the alleys between the beds, crops of cauliflowers, brocoli, cabbages, or savoys, &c. can be planted. Negroes, in general, when allowed to manage asparagus beds, often injure them, both at dressing them, and cutting the buds; it must be observed, that the beds at dressing must be left a little rounding in the middle by taking a little of the fine pulverised earth from the alleys, and with a spade spread evenly over the beds just before raking them; also, at the time of cutting not a foot ought to be put on the beds—the alleys are intended to stand in; it must be observed also, that the beds must be kept perfectly clean from weeds and grass during the season, and at each weeding, stir the ground with the fingers so as the surface may be kept free, loose, and fine to imbibe a share of the atmosphere.

Yours, &c.

SOMMERVILLE.

Art. VII.—*The Successful Planter, or Memoirs of my Uncle Ben: by an* Edistonian.

(Continued from Vol. iv. page 640.)

When my Uncle had finished dinner, he began to consider, whether he could devise nothing, which would increase the comfort of his people. As his observations were all practical, he began by criticising the day which had just passed before him. After examining carefully what had been defective in its course, he soon recollected that his people, while at work, were continually stopping to take their food. The inconvenience of such a system, soon appeared in its real light; and he accordingly turned his mind to its immediate remedy. It was evident to him, that such irregularity would retard their work and injure their health; to provide for which, was his first consideration. "I must, therefore, look," said he, "to its speedy reform." With this intent, my Uncle, suggested to himself many plans, by which he could unite economy with ease; and after having severally weighed them, in the scales of practice, he at length fell upon the following. From the most useless of his slaves, he selected one, to whom he allotted the office of general cook. For him he drew up rules of regulation, and strictly enjoined their observance upon his people. Thus, he ordained, that the cook should have breakfast at a suitable hour to which the people were to be punctual in attendance. Dinner was to be served up at a certain hour likewise, and the same rules were to be observed as at breakfast. The hour of attendance was to be declared by the sound of the horn, and the time for taking their last meal, was so regulated, that the workers always had ample space for completing their daily tasks before the call. If any one had not finished at the appointed hour, he was disgraced and went without his dinner for that day.

At first, the people being accustomed to a more irregular mode, were not well satisfied at this apparent innovation. But, after a strict observance of a few weeks, they became so pleased with the rule, that scarce any thing could induce them to change its manner. Upon holy-days, each person sent such rareties as he had to the cook, who would dress and serve it up on table, for the benefit of the

owner. And upon such occasions, he was permitted to invite any decent acquaintance of the neighbourhood to share in the repast. My Uncle was delighted to see them evince such conduct; and he always encouraged the disposition, by contributing to the table any little matter which they might need. "By exciting in them," said he, "this disposition of being agreeable to their friends, they will strive to appear well, by procuring from their industry, the means of appearing so."

I can assure my reader, that it was no unusual or unexemplary sight, to see the cleanliness and regularity, which the people maintained at these entertainments; not the least noise or confusion attended their convivialities—every one spoke in a moderate and becoming tone, and at no time, was an indecent word permitted to gain expression. So far, both they and my Uncle were well pleased. But he did not stop his examinations. He well knew, that he had only commenced the work of reform, and accordingly, he determined to carry it out at full length. He now pictured his own condition, and contrasted it with that of his people. He soon found that they were greatly wanting in cleanliness, which negligence he was well assured would destroy their activity and strength, which was every thing both to his and their interest. "I," said he, "live in comfort and ease. I have a house which protects me from the inclemency of the weather, and clothes which cover me from the cold and heat of the seasons; it is not more than just, that these men who procure them should in a measure enjoy the same. While, then, their labour shall procure the materials, it shall be my part to see them properly applied."

My Uncle Ben never brought his mind to any reasonable conclusion, that he did not attempt to follow by *practice*. And upon this rule, I think, depended his great success in after life. Accordingly, he at once looked into the matter that he had just proposed. Upon inspection, he found that most of his people's dwellings were old and exposed. From his own instance, he felt that neither health nor comfort could abide under such circumstances. He, therefore, commenced an entire reformation. He built most of their houses anew, and those which needed repair he repaired. He saw them provided with suitable clothing, and enjoined the strictest rules for preserving cleanliness.

Thus, every thing in a short time assumed a new appearance; and, from being a quarrelsome and unmanageable set, his people now assumed the harmony of a well regulated family.

The next thing that came under my Uncle's observance, was the establishment of a nursery for the young children. Their mothers, he saw, could not properly attend them, and at the same time pursue their labour. For this purpose he selected from the most faithful of his female slaves, one, whom he appointed to preside over this establishment. He directed her in the art of governing. And from skillful management, the children in a short time, assumed hardy and independent constitutions. To prepare them for the more arduous duties of their parents, he introduced among them works suitable to their ages and conditions. And even to so young a branch, he did not fail to inculcate useful lessons of life. He frequently spoke like a kind father, of those duties which belonged to them. And he acquired such an address that they were always delighted when he admonished them to their several labours. He praised them where praise was due. And he has frequently said, that "the greatest art of eloquence is to apply its attainment with effect to every subject." Indeed, I never saw the man who possessed more of the native simplicity of this art. I have seen him with a few unaffected words and a certain indescribable expression of gesture, bring the hearts and intention of the young and ignorant to his purpose. And I have gone to the councils of state amid the most sagacious politicians, and seen him by the same artless manner, carry them captive to any object he pleased. If I could learn any rule by which he gained this magic power; it seemed to be, that he never spoke where experience did not lead him, nor ever urged what practice could not easily accomplish.

The next consideration which presented itself, was that of regulating the marriage of his slaves. Some of them having partners on other plantations, irregularity and a temptation to roguery was soon produced, and all affection for home destroyed. Happily, however, for the order of his plan, there were but few who came under this evil. Where it was the case, he remedied it in this manner. Such of their partners as he could purchase, he did; and where he could not procure them, either through an inability to pay

their value, or from the disinclination of their master to sell, he made such special rules for regulating the matter, that but little inconvenience accrued; thus it was that in a very few years, he established the full order of his plan; and it was quite a rare thing, too see upon his plantation a marriagable slave who had not fulfilled the requirement of the rule. In the course of time, he saw distinct families grow up among his people; and it was no uninteresting sight, to see how emulous they each became to distinguish themselves daily in their master's eyes by the merit of their conduct.

On occasions, when sickness or unavoidable detention prevented his attendance, my Uncle was obliged to appoint some one to oversee in his place. At first, he selected one of the most faithful of his male slaves for the purpose; but he found one defect in this mode, which he soon amended. The director so appointed, would sometimes show a partiality to the females, and they thus became unobservant of their duties. This reason soon suggested, that this would ever be the case, with even the most honest director he could appoint. He therefore, separated the males into one body, and the females into another; and over each he appointed as overseer the most faithful and deserving of their own sex. By this means he destroyed that partiality which it is impossible to prevent the one sex from entertaining for the other; and every thing now went on in harmony. His people were allowed to make but few complaints against their directors; and at the same time, he saw, by close observation, that the directors exercised no undue authority over them. Whenever he discovered such an exercise, the directors seldom went without severe punishment and disgrace, and some other, more deserving, was appointed.

The settlement from being a collection of dirty looking huts now presented the appearance of a fine regulated village; and the cottages were so neatly and conveniently adjusted, that there were few dwellings in the parish to equal them. Nor did my Uncle stop here. The minutest object about him, had a proper attention paid it. Thus, for his cattle, he built convenient and comfortable stables. And he so managed, that they were properly and regularly fed, and otherwise attended to. He did not as was customary suffer his cattle to run at large to shift for themselves, but had an attentive person, whose business it was to see after them. By this means he found that they

grew both larger and yielded a greater profit by the deposit they made. His dairy and poultry yard, his garden and orchard, underwent similar regulations. And before Industry Hall was under the hands of my Uncle Ben, one short year, nature seemed with a profuse kindness, to have scattered all her good things around it.

(*To be continued.*)

ART. VIII.—*Account of some Improvements effected principally by horizontal Ditching and Ploughing; by* A GEORGIAN.

"October 15, 1831.

Mr. Editor,—I have been for the last year or two, more than usually attentive to my plantation, and have laid up a few facts furnished by my own experience, which on some future occasion I may seek to throw into your valuable repository of Georgical knowledge. The matter of this communication is derived from the experience of another, an older, more practical and more observant planter than I pretend to be; and who permits me to become his amanuensis—if not a mere pen-holder, at least a compiler. I now propose to give you some account of the proceedings by which my neighbour B. has brought up to profitable fertility, an old plantation, made some forty-five years ago, among the hills of the Oconee, "worn out," as our phrase is, and given for ten or a dozen years as a common grazing ground to the cattle of the neighbourhood.

This was an enterprise altogether too hopeless for the feeble resolution of a back-country Georgian; especially when it was considered that a wagon and team could in the course of a week or less, carry him and the contents of his cabin to the "new purchase"—fresh lands recently acquired from the Creek Indians. Mr. B. is a Virginian, bred to the plough, and proud of his profession; to which, I think he does more honour than any planter of my acquaintance.

To this day, though rather past the vigour of manhood, and quite exempt by his wealth, from the necessity of labour, he likes to turn a furrow.

Nine or ten years ago this gentleman purchased the relics of what had once been a plantation, at a small price indeed, for no one else wanted it on any terms. The first crop among the broom-straw and gullies, was of course worth much less than the expense of tillage. He thought of improvement by manures and deep ploughing; but the declivity of the steep hill sides, demonstrated the certainty of his losing by heavy rains, all his manure, and all the soil he might loosen by deep ploughing. The deepest horizontal furrows did not seem to promise relief against the washing of heavy rains. Unwilling to quit a location which he knew to be healthy, and neighbours to whom he was attached, he resolved to stay and make rich by art the fields which the vandalism of his predecessors had made barren.

As speedily as practicable he cut horizontal ditches around hills, nearly parallel, and between fifty and a hundred yards apart. In the cultivation of all sorts of crops, corn, cotton, wheat, oats, &c. his ploughs never run but parallel to these ditches. He drills every thing, and I believe never cross ploughs—I mean all his crops of cotton, corn, and the like are planted in drills; small grain he sows broad cast as usually practised.

This year, though Mr. B's land was never considered better than second quality of oak and hickory and exceedingly broken, he has one of the best crops in the country—nor has he failed to make a good crop since the third year of his cultivation. He applies to his fields all the manure he can make, prepares the soil by deep horizontal ploughing—keeps it well protected by horizontal ditches, and takes care to turn in grass and weeds, by breaking his land before these spontaneous or wild crops become dry or frost bitten. He thinks that seasonably ploughing-in green crops of grass and weeds, has done more than any other one cause to fertilize his soil. Mr. B. however, is a judicious husbandman, and avails himself of all the benefits arising from rotation of crops, rest of his exhausted fields, &c.

It is conformable to the universal experience of this part of the country, but no man has more satisfactorily tested the capacity of an old broom-straw field for the produc-

tion of a cotton or pea-crop than Mr. B. It is, indeed, a waste of time and labour to cultivate any but a tap-rooted plant on a field just redeemed from broom-grass.

A GEORGIAN.

Note.—Whilst Mr. B. has been fertilizing his fields, their productions in the course of nine or ten years have doubled or tripled his aggregate wealth.

ART. IX.—*An account of the difference of the growth of Cabbages planted in the field and garden, and an inquiry relative to the gathering of Ground Nuts; by* PAUL PRY.

" November, 14, 1831.

Mr. Editor.—The last summer I sowed frequently winter cabbage seed in the *garden*, and as often failed in raising them. After this disappointment the same seed, with a great variety of other cabbage seeds were sowed in the *fields*, from whence the first digging of root potatoes were recently taken; these came up regularly, are vigorous and free from worms and disease. About one hundred and fifty plants, sufficient for a bed, were procured from a neighbour's *garden*, these are now eat to a honey-comb by worms. The eight surrounding beds which were filled with plants from the *field*, have their leaves untouched by the worms. They form a great contrast with the first mentioned bed, and can only be assimilated to the present difference between the dilapidated anti-tariff and prosperous tariff-states. My neighbour's plants and my own were from the same stock of home-raised seeds, the only difference is that his were sowed in the *garden*, mine were sowed in the *field*.

I will be obliged to some of your correspondents for information upon the subject of gathering Ground-nuts. My present plan is the *old time*, laborous drudgery of grab-

bling and straching like turkies and rats. These nuts are one of the few articles which extracts money from that section of the Union where all our money goes—never to return again.

PAUL PRY.

ART. X.—*Correction; by* J. E. COLHOUN.

"Pendleton, November 27, 1831.

Dear Sir,—In the article which I lately sent you, I find a small error in punctuation which either you or I have made, of little consequence, but somewhat varying my meaning. It is in the paragraph detailing my mode of preparation for a crop of cotton. You say, "in this furrow the stalks are broken and laid on where there are poor spots; stable manure is hauled and distributed." It was my intention to say, In this furrow the stalks are broken and laid—where there are poor spots, stable manure is hauled and distributed. Intending to convey the idea that the stalks were broken and laid in the furrow throughout the field, but where there were some spots poorer than others, the stable manure was distributed on the stalks, &c.

It is a small matter, and perhaps not worthy of notice. This I leave to your discretion. Being a plain matter of fact statement.

Yours, respectfully, &c.

JOHN E. COLHOUN.

PART II.

SELECTIONS.

Art. I.—*On Planting.*

[FROM THE LIBRARY OF USEFUL KNOWLEDGE.]

The subject of planting may, with propriety, be divided into three parts: useful or forest-trees planting, ornamental or garden planting, and orchard or fruit tree planting. Each of these divisions of the subject, from its importance and interest, in a national point of view, as well as to individuals, seems to demand a distinct treatise.

The first of these, forest-tree planting, is proposed for the subject of the following pages: and the details for the theory and practice of the art discussed under the following heads:—

1. Of some of the advantages resulting from judicious planting.

2. Of the structure of trees; and of the natural agents which influence and govern the growth of the plant from the period of germination to its full maturity. Of the seeds of forest-trees: and of the process of vegetation.

3. Of the different modes of rearing forest-trees: by sowing the seeds on the spot where they are to remain for timber; of sowing the seeds on nursery beds, and afterwards transplanting the young plants to their timber sites; by preserving and training proper shoots or suckers, produced by coppice roots or stools. Comparative advantages and disadvantages of these different modes. Of simple and of mixed plantations.

4. Of the soils and sites most profitably employed in the growth of timber. Intimate nature of the different soils peculiarly adapted for the growth of the particular species of forest trees.

5. Of the most approved modes of preparing different soils for the reception of the plants: fencing, draining, ploughing, trenching. Of the formation of rides or carriage-ways into the interior of plantations. Of the best mode of covering these with herbage.

6. Of the culture of plantations: soil, pruning, thinning. Remedies for accidental injuries, and natural diseases of forest-

trees. Seasons for felling trees. Of the tanning in the bark of different species of trees.

7. Of the progressive increase of the size or produce of wood in different species of trees. Of the mode of valuing plantations: present value; prospective value. Of the products of plantations. Of some individual trees which have attained to great perfection. Of the terms used to denote certain products of plantations.

8. An enumeration of the different species: those of large growth, those of under growth for copse wood, ornament, or shelter. The generic botanical characters. Their natural soils; mode of propagation; and the uses to which their timber is more generally applied.

CHAHTER I.

Of some of the Advantages resulting from judicious Planting.

Judicious planting and the skilful culture of plantations combine national and private interests in an eminent degree; for, besides the real or intrinsic value of the timber or ostensible crop, with other produce of woods, available for the arts and comforts of life, judicious forest-tree planting improves the general climate of the neighbourhood, the staple of the soil, as regards the gradual accumulation of vegetable matter, affords shelter to live stock, promotes the growth of pasture and of corn crops, beautifies the landscape, and thus greatly and permanently increases the value of the fee simple of the estate and adjoining lands.

If we turn to those soils emphatically termed wastes—exposed, elevated lands, moors, bogs, and sterile sands—composing so large a portion of the British empire, and naturally clothed by the lowest and least valuable products of the vegetable kingdom, the inferior grasses, mosses, rushes, sedges, ferns, and heaths—we find that upon them the more valuable domestic animals cannot exist. If we consider the reason why they are so barren, waste, and unproductive, when compared with other lands not more favoured by nature, and under similar circumstances of latitude and elevation, the cause will, in many instances, be found in the want of the shelter and shade of trees, and of the ameliorating influence which plantations exercise on ungenial local climates.

The essential, permanent pasture grasses cannot be established on naked exposed situations; but when assisted by the shelter of forest-trees they become permanent and productive. Plantations supply us with fuel, with materials for fencing, enclosing, building; corn crops, soiling plants, and root crops are obtained in succession under their general protection. Many thousands of acres now unprofitable to the owners and to the com-

munity, might, by judicious planting, be reclaimed, and rendered highly productive; and it may be safely affirmed, that there is hardly a spot of waste land in the kingdom so barren, which by the exercise of skill in planting, and selection of proper species of forest-trees adapted to the soil and exposure, might not be covered with profitable plantations.

Numerous instances might be cited from different parts of the kingdom where exposed and sterile lands have, by planting, been made capable of producing valuable arable crops and the best pasture grasses, and of rearing and fattening stock of improved breeds. This, in effect, is adding to the territorial extent of a country, to its wealth and strength, by conquest over the natural defects of local climate, soil, and exposure.

—

CHAPTER II.

Of the Structure of Trees, and of the Natural Agents which influence and govern the growth of the Plants, from the period of Germination until the Trees arrive at full maturity.

Plants being living organized bodies, a just knowledge of the functions of their vital organs, and of the principal natural agents which influence their progress of growth to maturity, will be found a useful, if not an indispensable assistant to guide the practical planter in rearing trees in the most judicious and successful manner. This part of the subject properly belongs to vegetable physiology; and as the limits of an essay do not allow of entering into minute details, we shall here only notice those leading features of the structure of trees, and those functions of their vital organs, which more immediately influence the practical operations of the planter. In considering the progress of vegetable life, physiologists have distinguished six principal parts of a tree: the *root*, the *stem*, the *branches*, the *leaves*, the *flowers*, and the *fruit* or *seed*.

The varieties of the root of forest-trees are characterized by the names of the tap-root, fibrous root, and creeping root, these may be considered rather as indicating particular states of the same organ at different stages of growth than as permanent or specific distinctions.*

* In practical planting, as well as in practical botany, the root is considered to be that part of a plant which is hid underground, and the varieties of it are characterized according to the shape and mode of growth, as bulbous, tuberous, fibrous, or creeping; these again are susceptible of subdivision as they vary from the type. In physiology, however, the fibres or radicles are alone recognized as the roots, as it is they only which take up the food of the plant supplied by the soil.

The tuber of the turnip, potatoe, &c. and the bulb of the hyacinth, &c. are properly reservoirs in which to deposit the food of the plant until wanted in season for the production of leaves, flowers, and fruit, or seed. Indeed, bulbs and tubers may be considered the plant itself in certain stages

The tap-root is that which first appears on the vegetation of a healthy seed, and penetrates perpendicularly into the soil. From it issues numerous minute radicles; and as the proper leaves are developed, lateral roots or fibres are formed and sent out from the sides of the tap-root, particularly at the point of junction situated between the radicle and stem.

As the plant advances in age distinction of the tap-root is lost, either by decay or by its taking a horizontal direction in common with the general mass of roots, and from which in a few years, it is not to be distinguished. Other leading roots are frequently formed from the first delicate lateral fibres, which pervade the tap-root, and sometimes from its extremity when it happens to divide into parts, which always takes place when the extremity comes in contact with a richer or more genial soil, or, on the contrary extreme when it meets with obstructions in its first or early descent from whatever cause, rocks, gravel, &c. or by injury from insects: if the tap-root be taken from the seed leaves before the plumula appears, or before the developement of the proper leaves, the young seedling dies, and, again, should the tap root be deprived of the seed leaves before the production and expansion of the proper leaves, no farther reproduction or growth takes place. The uses of the tap-root, it will readily be perceived from these facts, are of great importance to the plant in its first stages of growth, and may be compared to the equally essential and important uses of the seminal leaves, at the same period; but its subsequent destruction does not, as it has been supposed, influence injuriously the ultimate produce or value of the tree.

Two or any equal number of trees, for instance, of the same age, of the like constitution, and reared on a soil of the same nature, the one from seed on the spot, the other being transplanted from a nuusery bed, without, or with a portion only of its tap-root, will give results which prove that trees, when transplanted at a certain age and size, and in all other respects of culture under the same circumstances, produce timber in quantity and in quality equal, if not superior, to untransplanted seedlings. Whether, therefore, to raise forest-trees from seed on the spot where they are to produce timber, or in nursery beds, and afterwards transplant them, is a question of mere expediency.

Where seeds of the kinds of forest-trees desired can be had at little cost; where the soil is friable; is in a perfectly clean state, and consequently adapted to the plough culture; where such animals as are destructive of seeds and young plants, as mice, rocks, and game, particularly hares and rabbits, are not likely

of its progress to maturity. A deciduous forest-tree in winter, when without its leaves, flowers, and seed, may be compared to a bulb or tuber, when destitute at the same time of these parts of a plant. Roots, in general, are also distinguished in practice as to duration, being annual, bienniel, and perennial.

to be greatly destructive; and where the the cost of labour is not comparatively high, then sowing the seeds of forest-trees in their timber sites, may be the best practice and be adopted with success. But where, on the contrary, these obstructions exist or are probable, transplanting select healthy trees from nursery beds, though the plants be deprived of their tap-roots, will be found more economical in the first outlay, and in the subsequent cost of culture; and the most profitable, as affording a quicker return of profit in prunings and thinnings, and will produce timber in a less number of years from the time of occupying the land for that purpose.

The fibrous-root is that which is most common to forest-trees. It consists of numerous divisions or bundles of fibres, furnished with minute spongeols, and nearly representing the divisions or ramifications of the large and smaller branches and buds of the tree.

The variety of creeping-root is chiefly confined to those trees which have the roots running horizontally, as in some species of poplar, elm, &c.

The organization of the root is similar to that of the stem and branches, from the *pith* which forms the centre of the body to the *epidermis* which covers the bark. Each part may be traced in uninterrupted continuation, from the minutest radicle of the root to the extremity of the smallest branch or bud of a tree.

When a root of whatever kind is divided, its horizontal section exhibits three distinct parts, the *pith*, the *wood*, and the *bark;* and a transverse section of the *trunk* of the tree, or of a branch, exhibits exactly the same parts.

The *pith* form the central circle of a *root*, *stem*, or *branch:* it is a cellular membraneous body of a silvery white colour. As the tree or root advances in age and the timber is perfected, the pith gradually loses its original spongy texture, the cells of which it is composed becoming more and more compressed until all appearance of it is lost in the wood, excepting that the concentric circle which it occupied appears whiter than the other annual layers. But although the pith thus disappears in the old, it still continues in progress with the young wood of the root, stem, or branches; and the periodical fibres or radicles of the former, and the buds or embryo branches of the latter, will, on examination, be found to originate from it. When a branch is pruned off close to a stem, wherein, from age, the pith has disappeared for some distance above and altogether from below the origin of the amputated branch, no reproduction of shoots takes place in whatever season the pruning may be performed, but should a portion of the branch be left to the stem, from that buds and shoots will spring. It also happens that when a branch is pruned off close to a young healthy stem containing perfect and active pith, before or shortly after the completion of the midsummer growth,

which usually takes place before the end of July, no reproduction of shoots follows the operation, but the efforts of the vital functions of the plant appear to be wholly directed to cover the wound with fresh bark. Should the pruning, however, be performed in spring before or shortly after the expansion of the leaves, or after their fall in autumn, a reproduction of buds and shoots ensues, and a slower progress in the formation of new bark is apparent.

The presence of leaves is essential to the growth of buds and branches, and consequently to that of the pith in these and in the roots; but the leaves are not otherwise necessary to the formation and growth of the fibres or radicles of the root, as these are produced in abundance when the plant or tree is leafless, and even during winter when the ground is covered with frost and snow, the reservoir of nourishment in the *pith* being probably sufficient for that purpose.

From these facts and others which might be brought forward, it is clear that the uses of the pith in the formation of buds in the branches of the tree, and of fibres or radicles in the root, and in the support of these during the first stages of growth, are analogous to the important functions of the seed leaves in the first stages of growth of the seedling plant. The pith of a radicle or fibre may readily be traced into that of the root, and the same is precisely the case in a branch with relation to the stem of the tree. The respective uses of these organs are only for the first and early stages of growth, and, after that, they may be lost without any apparent injury to the further progress of the parts in question: the cotyledons dry up and fall away as the healthy progress of the roots and leaves advances, and the pith disappears, or its identity is lost in the wood, as that part of the structure which surrounds it approximates to maturity.*

The *wood* stands next in order to the pith, it is formed of indurated vegetable fibre, and occupies the space between the pith

*A scion grafted on a stock, and a bud separated from its parent shoot and inserted into the *bark* of another tree, may at first sight offer proofs going to invalidate the opinion of the important uses of the pith in the formation of buds and fibres; but before the scion and the bud are taken off, or are in a fit state for the purposes of budding and grafting, the pith of the parent stock has already performed its offices. The important experiments of Mr. Knight on this subject proves that the pith may be removed in part without effecting the general health of the tree, just as the cotyledons may be removed from the young plant after having established its root and stem, with a continuation of pith to originate new buds, or embryo branches and radicles. We often meet with roots, which from severe injuries by mutilation at an advanced age of the tree, or by the injurious effects of a damp ungenial soil at an earlier period of growth, have lost the entire substance of the pith and wood, and present the appearance of a hollow tube, have yet young fibres or radicles issuing from their sides and continued as in roots where the pith and wood is perfect; on examination, however, these young fibres may be traced through the bark into the hollow of the root, demonstrating the origin of the radicle from the pith.

and the bark; it constitutes the bulk and strength of the subject. The yearly growth or increase of the wood is defined by circular lines or concentric layers clear to common observation in a transverse section of any root, branch or stem. The discriminating characters of the wood being more obvious in the stem, than in the root or rootlets, we shall consider it more particularly when mentioning the stem.

The *bark* covers the wood in every part of the tree, and is the most important organ of vegetable life, for the pith may be lessened, the wood may be partially or even wholly taken away, and, the leaves may be stripped off, and yet the tree may recover, but when deprived of its bark, the root, stem, or branch of a tree dies. It is, therefore, of the greatest importance to the practical planter, that the bark of the roots and of the exposed system of his plants should be preserved free from the slightest injury.

The bark when divided horizontally shews three distinct parts, the liber, or inner bark, which lies next to the wood; the cellular tissue, or parenchyma, which is distinguished in the bark of the exposed system of the plant by the fine green colour, but which is colourless in the bark of the root; and, lastly, the epidermis, or outer bark, which is the universal covering of every part of the tree.

On young shoots and stems the epidermis appears membraneous, or as a thin transparent membrane without vessels; but late researches, aided by powerful glasses, have shown that it is partially furnished with minute retiform vessels, particularly in the leaves.

When casually diplaced off young shoots it is reproduced with little apparent injury to the part, unless it happen on the annual parts of the tree, as the leaves and flowers. In old stems and branches the epidermis often attains to a considerable thickness, becoming hard, rough, or granulated, as seen in the trunk of elm, oak, and most kinds of forest-trees, and in the trunk of the apricot, pear, &c. among fruit-trees. When in this latter state, the epidermis may be removed without injury, and, in some instances, it has been cleared away from these fruit trees with evident advantage to their general health and fertility.*

* In the year 1831, the following trial was made to ascertain the effects of removing the rough, hardened epidermis from the trunk and limbs of a very large and aged Crassane pear tree. The tree was trained horizontally on a west wall, the branches extended twenty feet on each side of a large trunk in the most perfect order. The stem was cleared of the *rough* epidermis entirely, and the branches on one side also were treated in the like manner. The branches which extended on the other side of the stem, had only every alternate branch stripped of the rough, hardened epidermis. Previously to this, the tree had for many years ceased to bear fruit, except occasionally, one or two at the extremities of the upper branches. The first season after the above operation, the foliage assumed a more healthy appearance on the decorticated branches, and in the course of the second year many fruit buds were formed, which afterwards produced fruit of very

The parenchyma is composed of hexagonal cells, containing juice, which in the stems and branches is of a green colour, even when covered by a thick indurated epidermis; but in the root, as before alluded to, the juice of the parenchyma is colourless.

The inner bark consists of a cortical layers, constituted of longitudinal fibres or vessels, which are supposed to return the sap from the leaves after their undergoing certain changes by the action of solar light, heat, and air. The medullary rays which pass from the pith to the cellular textures of the inner bark and parenchyma in a horizontal direction, appear to be the medium of a lateral intercommunication of sap and air throughout the entire structure of the tree.*

The green colour of the parenchyma depends on the exposure of its epidermis to light and air; for when a portion of the stem of a tree is excluded from light, as is sometimes done in planting when the tree is placed deeper in the soil than it stood before transplanting, the green colour is destroyed in that part of it which is covered with the soil, and which in course of time assumes the colour of the root; and, if much moisture exists in the soil and the tree be not young, the bark so covered decays, and the tree dies. Should the soil be dry, however, and the plant young, the bark in question is gradually converted into root-bark; during this conversion of the stem-bark to that of the root, the plant advances but little, if any, in growth, but exhibits an unhealthy appearance, by the paleness of its leaves, and the weak growth of shoots. The same effects are in a great degree observable from the opposite error, of planting too shallow, which is when a portion of the root nearest to the stem is left above the ground. This exposed portion of the root-bark in time gains the green colour in its parenchym; and although no portion of

good quality. The branches which were suffered to remain with their hardened epidermis, continued barren. Adjoining to this tree was another of the same species, apparently of the like age and of nearly the same dimensions. In this instance every second branch was pruned off near to the stem, and the young grafts of the crassane, colmar, brown beurrie, and St. Germain, united to stumps of those branches respectively. These grafts all succeeded so well that in four years from the period of grafting they had nearly attained to the length of the old branches, and prodnced full crops of fruit of a very superior old quality. The old branches, which had purposely been left, remained in the same barren state as before. The branches produced from the grafts were superior at the end of the fifth year, in regard to health and produce, to the decorticated branches; and these last were in a like proportion superior to those branches which were left untouched. These facts go to prove clearly that the thickening and hardening of the epidermis has a very considerable influence on the health and fertility of a tree.

* It is contrary to every known law of the vital power, to suppose that any part of the structure of a living organized body can resist decomposition or decay, if it be cut off from a reciprocal communication with the circulating vital juices.

it is ever found to decay, as in the former instance, yet, for a time, the plant makes but little progress in the growth of wood: if a fruit tree, the effect appears to be to increase the formation of fruit buds, and to stimulate the functions of the tree to bear fruit. It may not be devoid of interest to remark here; that this is a more efficacious mode of inducing a free growing though barren fruit-tree to bear fruit, than any of those recommended for that purpose, such as *ringing*, or placing in an iron ring round a branch to prevent the annnual increase of bark on the space occupied by the ring, cutting the bark in the manner of a circular incision of a branch, dividing the roots, and by reversing the natual direction of the branches. It may be unnecessary to add, that the above facts point out the importance of planting every tree not deeper in the ground, nor farther out of the surface, than the root occupied in the soil previous to the transplantation; most essentially when the produce of wood or of timber is the primary object desired.

(To be continued.)

Art. II.—*On Grapes.*

[from the genesee farmer.]

As the season has now arrived for pruning and planting grape-vines, we will give such directions as we trust will enable those who are unacquainted with their management, to do it with sufficient nicety to ensure success. Although some writers on the culture of the vine, have been dogmatical in their directions as to the time and manner of pruning vines; yet, we think much depends upon the judgment of the operator, both for summer and fall pruning. Our observations at this time are designed to direct in fall pruning, as upon it much depends, both as to the growth of vine and produce of fruit. Most vines, if left without any pruning would produce fruit one or two years in garden culture; after which, they would become so thick and matted as not to produce at all. By taking notice of our wild vines of native grapes, it will be found that most of them run upon green trees or shrubs; and that by the growth of the tree, the vines are allowed to extend themselves; but even in that case, it is only those vines which are upon the outside of the branches which produce fruit: those which are confined within the branches where they

are constantly shaded, are continually drying and dropping off. So it would be upon a trellis or frame in the garden, if vines were left unpruned. The object in pruning, therefore, is to keep the vines within a smaller space than they would otherwise occupy; and at the same time keep them in a thrifty condition, and have them produce fruit in proportion to their strength. We will commence our observations with vines, the first year after planting, and will suppose that they have been trained the first or past summer with one shoot. This shoot if allowed to remain, would throw out the leading branches from the buds, near the end of it, which will be found to be smaller than those nearer the base; and in proportion as their size increases, so will be the strength of the shoots produced from them. Unless the growth of a vine has been uncommonly strong the first year, no fruit is expected from it or ought to be allowed to ripen on it the second year, but as it should be shaped for bearing the third year, two shoots should be allowed; therefore, the vine should be headed down, leaving about three good buds, so that if one of them should get injured, you may have two left; as after the young shoots have become firm, one of them may be taken off. In counting buds, there are generally two or three which are near to where the shoots put out from the old wood, that are small; these are to be rubbed off at leafing season, and not counted of any use unless the other regular buds are destroyed. For convenience sake we will denominate those *irregular buds*, as they never produce fruit. The second season, if vines are healthy and well attended, they will produce strong shoots, which should be headed down as before, leaving about three regular buds upon each shoot. Grapes produce their fruit upon wood grown the same season, and each bud left may be counted as producing from its shoots three bunches or clusters of grapes; if, therefore, three buds are left upon each shoot, and each new shoot produces three clusters, there will be eighteen clusters which will be as much fruit as most young vines of that age ought to produce. By the same rule of pruning and producing, the next season would produce twenty-seven clusters. By this calculation we should become mathematical: this is only for convenience sake, as judgment must supply the place of the figures. Some vines, from their strong growth will require to be extended faster than they would be by pruning down to a certain number of buds each year. For this purpose, a strong shoot should be selected which may be trained in a proper direction, and left of greater length; remembering that in common cases it will be only two or three buds at the end which will produce shoots strong enough for bearing fruit, and the remainder will only produce weak ones, which will be green and soft, and rarely ripen

their wood; it is better, therefore, that all the buds but a few near the end, should be rubbed off.

This manner of extending the vines should only be resorted to where it is necessary, as is the case often with the American varieties of grapes; as the Europeans rarely suffer so much for want of room. When a vine has been thus extended, and a large space left bare of small roots, it should be remembered *that shoots coming from old wood never produce fruit the same season;* and, therefore, should never be allowed to grow, unless it is to renovate the top by cutting out some old wood and substituting it; or for the purpose of layering or for cuttings. One of the most common faults with inexperienced gardeners in pruning vines is, that they have too much wood, by which the vine either exhausts itself with overbearing, or the shoots become weak by their multiplication. There should be some difference in pruning between American and European varieties. The American vines continue to increase in size and strength, according to their age, (or at least their time of growth hath never yet been limited,) but so far as our observations have extended, the European varieties in this climate, in open culture arrive at their greatest perfection in five or six years; after which, the most of the fruit from them is destroyed by mildew. When vines of a valuable variety are pruned, it is an object to save the branches cut off for cuttings; they should, therefore, have the tendrils and leaves taken off as far as their wood has ripened, or become hard. There are various opinions respecting the best method of using cuttings. Some prefer burying them full length, an inch below the surface, and allowing each bud to send up a shoot. Others recommend cutting them short, leaving one eye or joint to each cutting, and planting it like corn or other seeds. But the more common practice is, to cut the shoots into pieces of from one foot to a foot and a half in length, or at least of sufficient length to have upon each three buds, and planting them in rows with two joints below the ground and one above it. In cutting, it should be remembered that the roots spring from the cuttings in a circle, just below the joint; and therefore, the lower end of each cutting should be cut about an inch below the bud, as they are found to strike more readily than when most of the wood between the buds is left on. To ascertain the places from which the roots project from the cutting, a person has only to examine a thrifty growing vine at mid-summer, and he will discover below each joint a number of small holes through the bark, at equal distances below the joint, from which the half-coagulated sap exudes, forming small projecting tears; or by stripping off the bark at any season, he will find small fibrous projections from the wood, which extend part of the way through the bark, which by being placed in the ground extend and become roots. This is common to most creeping plants, and is a wonderful provision

in nature to secure them against injuries. Cuttings intended for planting may be planted out immediately, or they may be preserved until spring. Those from American varieties, need no protection; while those of foreign varieties should be covered with earth or manure, before the ground becomes frozen.

The advantage to be derived from vines will depend much on the choice of varieties, for which we would recommend our readers to the New Treatise on the vine, by William R. Prince; in which he places at the head of American varieties the Isabella; but our esteemed friend, Major J. Adlum, places at the head of his list, the Catawba, and says, "This I look upon as one of the best wine grapes in the United States; *and I say the very best.*" In this he is supported by a friend of ours who has them both in bearing. Major Adlum's "Memoir on the Cultivation of the vine in America, and the best mode of making wine," should be in the hand of every one who has a taste for horticulture; and vines of either variety, can now be procured in plenty at a cheap rate in this village, so that nothing but attention is now required to furnish our section of country with choice grapes in abundance.

Art. III.—*Essay on Manures.*

Presented to the Cheshire, New-Hampshire, Agricultural Society, in 1823, by Luke Howe, Esq. for which a premium was awarded by said Society.

[from the genesee farmer.]

The increasing attention to agriculture, aided by late chemical discoveries has excited that interest in the subject, which its importance merits. It is, indeed, singular, that it should have been left to the present age to make some of the greatest improvements in the first occupation of man, the cultivation of the soil. This fact is an evidence, of the favourable influence of science on practical husbandry.

Had Virgil united with his powers of poetry a knowledge of chemistry, his Georgics would not only have kindled in his countrymen a love of agriculture, but have introduced that train of correct information on the subject, which would have continued to progress, while science itself slumbered. It would not then, perhaps, have been said, that at the expiration of the eighteenth

century, agriculture was in no higher state of improvement, than during the days of Virgil and Cincinnatus.

Every farmer should have, at least some general *principles*, to govern him in the cultivation of his farm. *Mere matter of fact knowledge*, though very useful, is too limited for the various circumstances and changes of husbandry. He need not have a minute knowledge of chemistry, but should possess that general information of those principles which have a near relation to all his operations.

The main points of inquiry in the art of agriculture, are how to give fertility to weak and sterile soils, and to renovate such as are worn out by frequent cropping, with the least expense. These objects are, principally, effected by the due application of animal and vegetable substances, in the state of decomposition; and of those articles, which promote this state in these materials in the soil, and are themselves convertible into vegetable nutriment. Whatever is productive of these effects, may correctly be called *manure;* and in proportion, as these materials abound, to a certain degree, is the fertility of the soil.

It has been discovered, that, such being the vegetable economy, plants are incapable of absorbing solid substances, however minutely divided. This fact alone would confute the theory of Tull and others of his day, that earthy matter is the true vegetable nutriment; and that manure is only useful in mechanically pulverizing the soil. To produce this necessary state of solution of animal and vegetable substances, is the principal use of fermentation.

As the earth unmixed with these ingredients is perfectly sterile, it is a wise provision of the Author of Nature, that the vegetable growth of one year may become vegetable food for the succeeding. But the products of cultivated land, are removed for the sustenance of man and animals. It, therefore, depends on the good management of the farmer, whether he restores a sufficient substitute for what he has taken from his farm, to continue its fertility.

Every farmer does not correctly appreciate the influence, which a proper management and application of manure have on his crops. Hence arise inconveniences, and a want of system in his husbandry. He fences in his fields, and carefully secures his crops: but while his cattle are consuming them in the winter, they are permitted to drop their dung in the road, and by the side of streams, to be washed from his farm. Like a severe *task master* he makes the *same exactions* of his fields, without supplying them with the *means* of performing their *annual* task.

The *farm yard* is the greatest source of manure. On its situation and construction will depend considerably the quantity, which will be *made* and *preserved*. These objects require, that the yard should not be too extensive, be raised at the borders,

and have a good and firm bottom. A learned and venerable writer in the New-Hampshire Patriot, over the signature of "Cincinnatus," and the first number of the New-Hampshire Agricultural Repository have both given very particular and judicious directions, for the construction of barn yards; which ought to be observed by every farmer.* After these precautions, there will be at times overflowings which will carry from the yard a portion of the most nutritious manure. This would require, that these overflowings be received by land, which may be benefited thereby. But if circumstances will not permit this, an excavation or a cistern might be made, at the lowest part, either just without or within the yard.

Sir John Sinclair says "the more opulent (Flemish) farmers pave, or line with bricks, the receptacles of their dung, which is kept constantly plunged into liquid matter. The fibrous parts of vegetables are, in this manner, completely decomposed, and four tons of such manure will go as far as five collected and kept with less precaution." As most farmers will not be at the expense of lining these receptacles, they should furnish them abundantly with absorbing putrescent materials; or carry out the liquid matter in casks, or hogsheads soon after it is collected; and scatter it on grass land as a top dressing, or on fields before sowing. No manure exceeds this in richness, consisting of urine and the soluble parts of vegetables, more or less diluted; which from their saline impregnation, greatly promote the absorption of moisture in the soil.

In the winter, straw, buts of corn, litter, &c. will collect in the yard, somewhat in proportion as the farmer has been diligent in making manure for preceding crops of grain and hay. No industrious farmer will neglect to cart into his yard, in the fall and spring, mould, mud, sods, &c. taken from the sides of the road, cavities, and low grounds, on his farm. A quantity of these will be required after the yard is cleared in the fall, as a sort of ground work of accumulating materials; and, in the spring, a similar quantity shall be wanted for the same purpose, if it be thought expedient to use the manure collected in the preceding fall and winter; otherwise for a covering to defend the manure from evaporation, and the scorching of the sun. Late in the summer these materials should be well mixed by the plough, which would equalize the fermentation, and much improve the whole. But this should not be done unless another covering can soon be afforded, as the loss from the escape of elastic fluids, would be greater than the benefits resulting from the operation. When the manure is thinly spread at the outer

* We have not seen those directions. We do not doubt, however, of their utility. The directions given by J. Buel, Esq. of Albany, published in the New-England Farmer, vol. iv. page 102. appear to us to be the best for American farmers, which we have seen.—*Ed. Gen. Far.*

edges of the yard, it may be well, during the summer months, to scrape it towards the centre or thicker parts.

As the quantity and richness of the manure, depend much on its mixture with the excrements of the cattle; no farmer, attentive to his interest, will suffer them while fed from the barn to go at large, or out of the yard for water. By confining the cattle to the yard at such seasons, he would save enough in two years, in ordinary circumstances, to procure water for them by aqueducts, or well and pump.

Few farmers correctly estimate the value of urine as a manure. To preserve the cattle dry, they make holes through the floor of the leantos, to drain off the liquid excrements. No one will question the importance of keeping cattle dry; but this may be effected without so great a sacrifice. Perhaps the best constructed leantos are those which have cellars under them, into which are thrown, dung, litter, &c. Here nothing is lost, but with a moderate degree of heat, undue fermentation is prevented; and the manure is not bleached by rains, nor carried away by evaporation. Where the situation will not permit of this plan, some provident farmers raise the floors, and throw beneath them loam and some absorbent materials, which will receive and retain the liquid matter, that may escape through the cracks and fissures. But, as the situation in one case, and negligence or want of time in the other, may prevent either from being adopted it would be a good improvement to construct the floors impervious to the urine, and sufficiently descending to carry it from the cattle. By these means they would be kept dry and warm, and the dung thrown from the leantos would be of a superior quality. But such manure contains so much soluble matter that it is peculiarly exposed to loss, if suffered to remain uncovered at the barn windows. This might be prevented by building cheap sheds over the heap. Owing to the great care, that horses be kept clean and warm, less error prevails in constructing their stables. More litter is incorporated with their dung, which gives to it an additional absorbing quality.

But a great error prevails in the management of this dung, in permitting it to remain too long in heaps beside the stalls. In this situation, excessive fermentation takes place, and becomes scorched, or what is called in the Edinburgh Encyclopædia, *fire fanged*, the greatest obstacle to the rotting of dung, that can be experienced. But the greatest loss is not from this charred state, but from the gaseous escape of the fertilizing particles.

It thus loses, perhaps, one-half its value. The farmer has it in his power to prevent this loss but with little trouble; by spreading it on the yard with the more moist and less fermentable dung of the cattle. He will thus improve the quality of both. At large stables where horses only are kept, the dung should be often removed, or the heaps enclosed in a yard for swine. The

hog-stye with a *yard*, is a prolific source of manure. It is the observing and industrious farmer's *manure factory*, in which his *busy labourers* will earn their *bread*, if supplied with the *raw materials*. In estimating his profits from the swine, he will add to their amount of pork the labour they perform in furnishing manure for the farm. Much that is put into the yard, will require more moisture than the natural soil, in some situations will afford. The sink by proper duct, when situations permit, would supply the requisite quantity of water and much richness to the manure. If the sink-water is not wanted, or cannot be used for this purpose, it should be conveyed to the kitchen garden. It would sufficiently enrich ground enough to produce the garden vegetables for the family. When the subsoil of the hog yard is not hard clay or gravel, some provident farmers lay a flooring of timber or stone. Into this yard he will first haul a quantity of loam, sods, &c. After these, straw, cobs, brakes, briars, garden weeds, Canada thistles, and field vines, particularly those of the potato, will be thrown in at their proper season. The potato vines should be thrown into heaps, when they are pulled, to be carted to the manure yard, when they are prepared for them. Thistles and other weeds should be gathered before they become seeded, as their seeds are not destroyed by slight fermentation. As green succulent seeds readily ferment, occasional additions of absorbing materials should be added to retain their volatile and soluble parts.

These may in time be furnished from scrapings around the house and yards, of dirt, old shoes, "hair, rags and feathers." Thus two objects will be gained, cleanliness and substantial profit. It is an almost universal practice with our farmers, to cart their pomace to some spot by the side of the road, there to remain for years where its supposed deleterious qualities may do no harm to the soil. The pomace contains a considerable quantity of saccharine matter, notwithstanding the operations of the mill on it. This is a rich food for plants, and a constituent of most vegetables. By fermentation, it produces acetous acid; so do other vegetable substances in greater or less proportion.

The straw necessarily mixed with it increases its value. It is said as an evidence against its use, that it destroys vegetation where it lies. So do less quantities of ashes, dung, urine, &c. But the apple seeds germinate on the heap, and would grow thrifty if earthy matter were mixed with the pomace. It might be made into valuable manure by incorporating it with compost materials, or, which perhaps would be better, it might be thrown into the hog-yard. As putrefactive fermentation takes place slowly in pomace, lime or ashes should always be added to it, when put into a compost heap.

The dung of *fowls* is a rich manure. For its fermentable qualities, it is used by tanners in the preparation of hides in the

process of tanning. It is, therefore, a valuable addition to coarse and unfermentable manure. While the farmer pays proper regard to cleanliness in his barns, he should not be unmindful of economy.

This principle would apply to the necessary. *Night-soil*, both for convenience and preparation for manure, should be mixed with other substances. The Chinese, whose economy is said to extend to the saving of the hair shorn from the head, and the pairing of their nails, mix marl with it, and when properly dried, it is a merchantable article with them. Frequent applications of a small quantity of lime, will prevent the unpleasant effluvia.

It should be carried out at least in the spring and fall, and mixed with other manure or earth.

(To be continued.)

Art. IV.—*On Fall Feeding of Cattle.*

[FROM THE NEW-ENGLAND FARMER.]

Mr. Fessenden,—Although the pastures look uncommonly green for the season, it is apparent, that the alimentary properties of the grass are beginning to be seriously diminished. Already, the cattle of some of my neighbours, especially those which are fed on outlands, look pinched, and are obviously falling away. This, I have frequently said to myself, is bad management. If they cannot be kept in a thriving condition at the present season, they should certainly not be suffered to fall away; for it is apparent that they will need the stamina which they have acquired, during the winter approaching. In respect to young cattle, this may not be as important, although their growth must be proportionally retarded; but in respect to *milch cows* and *working oxen* it is absolutely essential. Unless in a good condition, cows cannot be expected to yield a large quantity of milk, nor that of an excellent quality; for I take it as settled, that both the quantity and quality of milk depend much upon the condition of a cow. And in respect to working oxen, their powers of draught and endurance are, to a certain extent, in proportion to their good condition.

But by what means, it may be asked, shall the good condition of cattle be preserved, in consistency with economy? Will it answer, asked the farmer, to begin thus early to fodder my stock? To this I would reply, that every farmer should have provided for the exigencies of this *precise season of the year;* and should have been taught to have thus provided by his past experience. He should have raised a good crop of pumkins; or, as these are somewhat uncertain, he should have sown a field of turnips, carrots, &c. to be fed out early. But as many farmers, may not have thus provided, the question will probably occur, is it economical to begin to fodder at this time, when cattle appear to be falling off in condition? In my own view, the proper answer is, *by all means.* But, it may be said, that beginning thus early in the season, the fodder will not last. Be it so; keep your cattle in good condition as long as it does last, and if necessary then buy more. Or, if they must be pinched, let it be towards spring. If their solids have remained until that time undiminished, they will have something upon which to rely, should the fodder come short. Or which is, perhaps, a still better remedy for the anticipated evil, sell off your cattle, retaining only that number which you are *sure of keeping well.* Keep your cattle growing the whole year around—keep your milch cows, so that even late in the fall, their milk will not be seriously dimished from the quantity they gave in midsummer. Keep your oxen so that, if any accident befals them, you would not be afraid to recommend them as tolerable beef. These directions are all practicable; and if practised upon would be found, I doubt not, economical, strictly so.

But if you judge otherwise, you are at liberty to suppress what I have written, or disprove it, if you are able.

Yours, G.

Berlin, Con. November, 1831.

The above remarks appear to us to be correct and judicious. Deane's New-England Farmer coincides with our correspondent in some of his directions. In that work it is observed—"the meanest fodder should not be dealt out first of all. The straw and the worst hay should be reserved to give them in the coldest weather; for it is then that they have the keenest appetites. When a farmer thinks that he has too much stock for his fodder, as will sometimes be the case, it is not best to pinch them in their allowance so much in the fore part of winter as in the latter part. For the cattle are more liable to be pinched with cold, in December and January than afterwards. And no man knows how favourable the latter part of winter may be.—*Ed. N. E. Farmer.*

Art. V.—*On Winter Butter, Short Horned Cattle, &c.*

[FROM THE NEW-ENGLAND FARMER]

Mr. Editor,—Much has been said in the New-England Farmer about *freezing* the milk to obtain cream for butter. My objections to this practice are, the butter so made is inclining to be *white, will not sell well*, and is *crumbly* and *will not cut handsomely*. Beside, I think the flavour hardly equal to that made in the method we have pursued.

Our object has been to keep the milk in a temperature always *above* the freezing point—say, not lower than 40 or 45 degrees.

The method which we have practised, and which I think best for winter, was recommended to me by that great friend to agricultural improvement, Charles Vaughan, Esq. as followed in the counties of Somerset and Devon, England. The milk immediately after it is taken from the cow, is put in a copper or brass vessel, of a size according to the quantity of the milk, care being taken that it is not more than eight or ten inches in depth, and gradually brought to within two or three degrees of boiling heat, when it is permitted slowly to cool. In the course of five or six hours, the most of the cream rises in a beautiful thick sheet, and is so solid that it may be cut with a knife in almost any form. It comes to butter almost immediately, *never* requiring more than five minutes' churning. The butter is of fine quality, being of good colour and flavour. The practice also saves labour and *cold fingers*. We have in this way had no butter that was not as high coloured as what I send you. But perhaps the high colour may be owing considerably to the extra richness of the milk, and this quality of the milk is wholly attributable to the cows. My stock consists of the *Short Horn* breed in the blood of *Cœlibs*, *Denton* and *Holderness*, the *Herefordshire* in the blood of Sir Isaac, the *Bakewell*, and that excellent, though undefined breed introduced here from England by Charles Vaughan, Esq. and the best *selected native*.

I am aware that much contrariety of opinion exists as to the properties and relative value of the different breeds of cattle, and my intentions have been, and still are, to go through with a series of *fair experiments* on the subject.

So far as several years observations and one year's *experience* will enable me to judge, I am inclined to think the improved imported races (the short horns, particularly) the most *profitable*—that is, taking them for all purposes. I do not know that they will give any *more* than the 'natives,' but it is, I believe, generally, of a *better quality*, and they certainly keep in *much* better order on the same food. They are also *put together* more on me-

chanical principles, are *stronger*, and have better *constitutions*. I would recommend to every farmer to give them a fair trial.

Yours, with respect,

SANFORD HOWARD.

Vaughan Place, Hollowell, April 18, 1831.

Art. VI.—*On Feeding Hogs.*

[FROM THE GENESEE FARMER.]

Our good farmers find the month of September to be a very important one in regard to feeding their hogs. Those who wish to be economical in feeding, should begin early. Every farmer who is fattening hogs should have a cauldron set in an arch near his pen in which he can boil pumkins, potatoes, meal, &c. as it will be found much cheaper in this section of country to feed with boiled food than to give it to them raw. From the low price which potatoes and pumkin are sold at in our market towns, and their great weight and small value they will not bear long transport, therefore, it is better to feed them to the hogs and save the corn which would be required were they fattened on it, as that is not so perishable an article. When potatoes are boiled and mashed they make excellent feed for hogs; if a proportion of pumpkins are mixed with them they are still better, and if to both, a small quantity of corn-meal be added, we do not know of any feed with which hogs can be fattened to more advantage. We know that it is said that pork which is fed with boiled food is not as hard, and of course the purchaser will endeavour to take advantage of the circumstance; but let hogs be fed in this manner for the first three-fourths of the time they are fattening, the remainder with meal or soft corn, and we assure our farmers that that they will find a ready market for their pork, and at first prices. It is well to apprise our readers that pork fattened with still slops is a different article; soft, and charged with the acetic acid or vinegar from the slops on which they are fed, and from which circumstance it is almost impossible to prevent the pork from turning sour, and spoiling after it is packed in the barrels, unless there is an alkali added to the brine to neutralize the acidity contained in it. From this acidity, pork fed on boiled food as above, is entirely free, and therefore is as easily kept as if fed with corn: and if not quite so hard it cannot operate to lessen

the value of it, as the hams will be increased in value as much as the side or mess can be deteriorated. A portion of time spent in gathering up those things which of themselves are not so marketable, and converting them into food for hogs at this season, will save much, that is more directly so, and will prove equally as profitable as that spent in raising such crops, as the old adage is, "a penny saved is as good as a penny earned."

Art. VII.—*On Bees.*

[FROM THE NEW-ENGLAND FARMER.]

Mr. Fessenden,—If the inexhaustible subject of bees is not worn out in your columns, you may state as follows:—

In January last, with two friends, I called at a gentleman's house in Worcester, Otsego County, (N. Y.) to see his bee hives. He showed us a house 4 by 6 feet, and 6 feet to the eaves, boarded, clapboarded, shingled and well floored, with a close door; on unlocking and opening which, we beheld an ordinary bee-hive attached to the east wall and well braced, with slight scaffoldings extending upon the east, south and north sides. The only aperture was a small hole or two on the east side under the hive, which was elevated about three feet from the floor, for the bees to pass in and out. The bees had been put in, a young swarm eighteen months before. The original hive was not only filled, but large masses of comb were attached to the exterior, and along the contiguous scaffolding. The quantity of honey was probably from 100 to 150 lbs. On my return I called to see another bee house belonging to the same gentleman, on another farm, built the preceding summer. This was 6 feet square, better finished and painted. The bees had filled the ordinary hive, and constructed eight or ten large pieces of comb on the exterior, and these last were mostly filled with honey, and of the finest appearance, I think, that I ever saw. The gentleman told me he could help himself to honey whenever he pleased, without disturbing the bees. I asked him if the bee moth did not plague him; he answered no. *He adopted the simple precaution of sprinkling spirits of turpentine occasionally, say every two weeks, about his ordinary hives, and around the holes of entrance into his large ones, which wholly repelled the moth.* I was so much pleased with this plan of managing bees, that immediately on my return I had a house constructed for them, and designed to put into it the first swarm which I can save.

Respectfully, J. BUEL.

PART III.

MISCELLANEOUS INTELLIGENCE.

Upas Trees.—Batavia, (Java,) April 15, 1831.—Dear Sir, In the N. York Evening Post of Dec 6, 1830, I observed an article headed the "Bohon Upas Tree," purporting to be facts taken from the journal of a Botanist sent by the Emperor Napoleon to this country in 1810.

The Bohon Upas grows in almost every forest on the island; but the story from which the Botanist has taken his remarks is all a fable, and such a tree as he describes, possessed of such deadly qualities as to affect the atmosphere for miles in circumference, does not exist. A short time since, when in the country, I sat under a Bohon Upas, from which the natives procured a substance for poisoning their weapons, which is obtained by cutting notches in the tree, and a substance thus procured, mixed with the juice of lemons, is rubbed on the blade. The botanist observes, "the poison is a gum, which, like a Camphor, issues from the bark."* Now Camphor being of a dry nature, does not exude from the tree or manifest any appearance on the outside. The natives, from long experience, know whether any is contained within, by striking it with a stick. In that case they cut it down and split it with wedges into small pieces, finding the camphor in the interstices in the state of a concrete chrystallization. Thus you see the comparison is not a good one, and he knew nothing of the Camphor tree.

Some of the Java weapons are so poisonous as to require but a slight incision to deprive one of life in a few moments, but it is necessary to renew the poison every few years, as age destroys in a great measure its strength.

I hope you will give the above publication, that the rising generation may know, that although the Bohon Upas affords poison for the natives' weapons, it is not possessed of those deadly qualities so often related, and that vegetation beneath its branches is as flourishing as at any distance from it, and the traveller may rest his weary limbs beneath its shade without the fear of the least injury.

The name in the Javanese language means *Bohon*, tree; *Upas*, poison.

Yours truly, F. V. B. M.

Clara Polder.—The Clara Polder, containing 12 or 13 of the finest farms in the country, from 100 to 500 acres each, was lately totally inundated by the tide, through the opening which the Dutch have made in the sea-dike to the east of the Capitalen Dam. The damage is incalculable. One thousand five hundred acres of the finest land in Europe, the harvest in the barns, the crop of potatoes, the loss of which ruins above 100 families; the plantations, the buildings are all destroyed. The land will produce nothing for many years, and enormous expense will be necessary to stop a breach made between two creeks, and which will be widened and deepened in a frightful manner.—*London paper.*

* *Vide Marsden's History of Summatra.*

Blight in Pear Trees.—The disease of the pear tree, termed *blight*, has been less prevalent this year than during years past. But it seems to have assumed a new character, or changed its mode of attack. In the early part of the season I discovered that the epidermis on the bodies of several trees, of two to four inches in diameter, had become brown in spots, and was cracked and separating from the true bark; and in some instances I found the disease had extended to the wood I immediately had them washed with a weak solution of chloride of lime, which seems to have restored them to health. I applied the chloride the preceding year to the stumps of some amputated branches, in some of which cases the disease had extended down upon one side of the bole of the tree. In every case the disease was checked, and the live parts have protruded beyond the dead wood Although Mr. Lowell, whom I highly respect, and whom I am ambitious to propitiate, detests all theories, I am nevertheless induced to hazard my theory in this case. It is this, that the disease is owing to a minute insect, which preys upon the bark, and vitiates and poisons the elaborated sap; and that the chloride destroys the insect and becomes an antidote to the poison. From partial experiments I am induced to believe that chloride will prove an efficient preventive to the mildew on grapes also. These suggestions are hazarded in the hope that they may lead others to make more satisfactory experiments. J. BUEL.

Oct. 20, 1831. *New England Farmer.*

—

Canada Cotton.—A Montreal paper gives the following account of an experiment in spinning the wild Cotton in Canada.

Among the various plants which nature in her Canadian wildness produces in profusion, few have perhaps been considered of less value than that which by the Canadians is called Cottonier. Cart loads, nay ship loads of its seed are blown away by the wind yearly, and yet that seed has now been ascertained to be convertible to a most useful and even important purpose. For this discovery the public are indebted to the observation and perseverance of the lady of Dr. Stewart Chisholm, of Glengary, in Upper Canada, who resolved upon making the attempt to spin some of the wild cotton, heretofore lost to any good purpose. This attempt has so entirely succeeded, that not only has Mrs. Chisholm spun a very large quantity of the material, but has caused it to be woven into a sort of etoffe, most valuable in this rude climate, for many purposes, in the habitant's and cottager's establishment. We have been favoured with a piece of the manufactured stuff, cut from this web, and which all persons, desirous of so doing, will be welcome to inspect at the Herald Office.

—

Large Pumkins—The Camden (S. C.) paper mentions a squash vine at Hanging Rock Creek, which bore ten squashes. One measured 6 feet 6 inches in circumference and weighed 122 lbs.; another measured 5 feet 10 inches and weighed 96 lbs. This beats every thing! They must have been mammoth pumkins.

—

Drink for Horses.—Some of the Inn-keepers on the western road have adopted the practice, recommended by a member of the Bath Agricultural Society, of boiling the corn given to horses, and giving them water to drink. It is most satisfactorily ascertained that three bnshels of oats, barley, &c. so prepared, will keep the horses in better condition for working than double the quantity in a crude state.—*English paper.*

—

New Shoes for Horses—An English saddler, named Tade, (says Le Petit Courier des Dames) has invented a shoe for horses. It is fastened on with strings of leather instead of nails, and is so managed that it may be put on or removed as the rider wishes or wants in less than a minute. The object

of this invention is to enable the rider to replace at once during a journey any of the iron shoes which may be lost, and to continue his journey without fear of exposing the animal to the accidents which might result from the loss of a shoe. The lightness of the shoe, which weighs no more than half the iron one, and its portable form, as it can be carried with ease in the pocket or behind the saddle, are great improvements; a still greater is, that it may be taken off when horses are grazing, even for a short time.

—

Potato Starch —A corespondent of the New York Advocate states—In a town containing about 1400 inhabitants, in a sterile part of New Hampshire, about 50 miles northwest of Boston, there was manufactured into starch, for the use of manufactories, 45,000 bushels of Potatoes, at 20 cents per bushel, amounting to 9000 dollars.

—

Butter consumed in London.—It was computed, some years since, that no less than 112,000,000 pounds of butter are annually consumed in London, chiefly made within 40 miles round the city.– From the three counties of York, Cambridge, and Suffolk, there are annually sent to the capital 210,000 firkins, amounting to 11,760,000 lbs.

—

Cows.—At the recent cattle show and Farmer's Fair, in Andover, (Mass.) two cows were exhibited, one of which, with feed from a common pasture, had given from the 2d of May to the 27th of September, 586 gallons of superior milk, being an average produce of four gallons per day. The other gave in the month of June, 17 quarts a day, and there was made from her milk in one month, *fifty* pounds of good butter.

—

Grapes. Mr. Fessenden,—I have the past season, made an experiment on a fine White Sweet Water Grape, (a vine somewhat extended.) As soon as the grape became two thirds grown, I picked off the leaves partially, in order to admit the sun to the fruit, presuming that it would be benefited by it, but much to my surprise it soon *blasted, cracked open and withered*, while on other parts of the vine the clusters were large, and the grapes of full size and of a delicious flavor. From this it appears evident that it is a great injury to remove the leaves, as the clusters most secluded were the largest and finest grapes. From this vine, which is now 5 or 6 years old, I had more than half a bushel of the most delicious grapes, and had I not removed the leaves from a considerable portion of the same, I should have probably had a peck more. If this information is of any value to others interested in the culture of this fine fruit you will please mention it, as you have fully evinced your desire to promote the great interests of agriculture and horticulture Yours truly, L. JENKINS.

Canandaigua, N. Y. Nov. 2, 1831.—New England Farmer.

—

Sunflower Oil.—Mr. Joseph Mann, of Salisbury, (Mass.) in a communication to the New England Farmer, states that after several trials made with sunflower seed, he was unable to obtain more than two quarts of oil from a bushel. The process by which Mr. Mann arrived at this result was a singular one altogether. He says, "we first made several trials by grinding and pressing, but in this way the most we could get was one quart and a half pint, from one bushel We then heated the seed, and pressed it without grinding, but it did not succeed so well; we then ground and pressed it cold, and procured two quarts, and this was the most we could procure in any way." Mr. Mann adds: "I presume the cause why it did not produce as much when hot pressed as cold, was that the *hull* of the seed when hot absorbed the oil more readily,'—which is very good philosophy.

It is precisely this absorption of the oil by the *hull*, that was the main cause of Mr Mann's "decided failure." Mr Barnitz of York, who cultivates the sunflower extensively, succeeds easily in obtaining four quarts from a

bushel of good seed—three quarts cold pressed and one by heating; but the *hull* is previously removed by an aparatus and process which Mr. Barnitz has patented. Hence the reason why the attempt to make oil proved unsuccessful and unprofitable, is not to be sought in any supposed unfitness of sunflower seed for such purpose, but in the inadequacy of the process employed by Mr Mann to effect it.

A German agricultural work, published at Halle, in 1824, has lately fallen into our hands, and we take this occasion to translate the following paragraphs from an article on the culture of the sunflower.

Sunflower seed yields an excellent oil, richer than olive and yet equally bland and mild; it is also purer and more transparent, tinged with a slight shade of yellow. It is destitute of smell, and in taste somewhat resembles that of almonds. In Upper Saxony it is much used instead of olive oil. It is thought to be equally good and much more economical, as two gills of it will suffice where three gills of the other would be required. As a lamp oil it burns with a beautiful flame, producing no smoke and diffusing no disagreeable smell. Curriers have found it particularly useful in dressing leather, as it aids in imparting a permanent and clear black ebony

The leaves of the sunflower, among other uses to which they may be applied, are serviceable in the art of colouring. They are to be dried in the shade, by spreading them thin on a table or a clean floor and turning them frequently. A small handful of these dried leaves boiled in a point of soft water in a well glazed earthen vessel, with half a teaspoonful of alum added, is said to produce a beautiful and permanent yellow dye, but whether adapted to dying linen, cotton or woollen goods, is not stated.—*Lancaster Examiner.*

—

Rot in Sheep.—Most of your readers are aware that by the frequent and repeated moistening of land the grass grows in abundance, much more quickly, and has a more luxuriant appearance, particularly when the weather is close and warm. It is this quickness of its growth which I think is the great cause of the mischief. When grown slowly, time is allowed for that bitter principle to be more fully elaborated, on which depends the good quality of our grasses, which is the case in a moderately dry season, and when also the disease does not make itsappearance. But when, contrary to this, the grass grows too quickly to allow that change taking place, and it does not contain that bitterness, but has a more delicate appearance, or, what is termed squashy, the sheep become diseased from the loss of that usual stimulus to the bowels, the bitter principle of well grown grass. In consequence of this they become torpid, the food not well digested, the secretion of bile sluggish; and here is the foundation of that mass of disease in the liver. How far this opinion may be correct I leave to the judgment of others; but should it prove so, the remedy will be simple when taken in the first place, that is, before the matter is formed in the liver. I presume that for the want of that stimulus to the bowels the liver does not perform its functions, and becomes overloaded with bile, part of which is again circulated with the blood; but in time, from its stagnation it becomes putrid, and matter is formed upon the liver in small tubercles, which bursting into each other become abscesse, in which are found the hydatids or flukes. By what means they get there is at present a matter of conjecture. It is certain they are animalculæ, as they have been seen to move several hours after their removal from the sheep. It may be asked by some, how are we to know the rot in its first stage? The weather, the situation of his land, together with his own judgment as to the probability of the flock becoming diseased are the shepherd's best guides. The sheep, themselves, in an early stage of the disease will appear slothful, and their eyes dim, with a tinge of yellow; i. e. having a jaundiced appearance. In this state, I should give a few doses of mild mercurials, saline aperients, and then a mild bitter infusion, such as infusion of chamomile or of gentian, two or three times a day. *Loudon's Mag. of Nat. His.*